



TOUCH DOWN—Federal Aviation Agency's white and silver 880-M with black FAA emblazoned on tail was caught last week by lensman Ernie Flisrand during brief pause for refueling on San Diego flight line. Plane was kept in air morning

to night in 80-flight-hour training program before nonstop delivery flight to Oklahoma City headquarters. Entering plane are FAA flight officials. Convair jetliner will be used to train FAA inspectors assigned to 880 operators.

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CONVAIR EDITION

GENERAL DYNAMICS NEWS

VOL. 14, NO. 19

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WEDNESDAY, SEPT. 13, 1961

'Merit Employment Policy' Proclaimed

By executive order, General Dynamics Corporation has reaffirmed corporate policy that "all persons shall receive equal employment opportunities in accordance with their individual job-related qualifications, without regard to race, creed, color or national origin."

The setting forth of detailed policy, called "Merit Employment Policy," is in line with national principles proclaimed by President Kennedy and the President's Committee on Equal Employment Opportunity.



"For General Dynamics, this is reaffirmation of a policy in effect for many years. As an employer we are interested in an individual's ability and aptitude, and qualifications for advancement."

Earl D. Johnson, General Dynamics president, commented in approving the order.

Specifically, the Merit Employment Policy states that, "Equal opportunities include, but are not limited to, employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay and selection for

training including apprenticeship."

Division executive heads are charged with implementation of Merit Employment Policy, and R. H. Biron, senior vice president-industrial relations, is responsible for providing policy guidance, coordination and necessary follow-up in interpretation, etc.

The policy provides for development of recruiting practices that "seek out qualified minority group candidates for openings in professional, technical, administrative and clerical positions, as well as factory-skilled and semi-skilled occupations and apprentices."

'Dynamic America' Sales Start Friday

First copies of "Dynamic America," will go on sale at bargain rate to General Dynamics/Convair purchasers this Friday (Sept. 15).

The profusely illustrated volume of development of General Dynamics Corporation goes to employees for \$7.50. Regular price is \$20.

Books may be purchased directly at employee services counter, Bldg. 32, Plant 1. Orders will be taken at Plant 2 employee services and at Rose Canyon through Virginia Cannon, ext. 2125.

GD/Telecommunication Division Created With Rochester Hdq.

NEW YORK—General Dynamics Corporation has announced formation of a new division, General Dynamics/Telecommunication.

Gates Named Chief Of Astro Guards

A. C. Gates, a veteran of almost 15 years service in General Dynamics security operations, has been named guard chief at General Dynamics/Astronautics by W. E. Bowman, chief of industrial security.

Gates replaces J. M. Mernik who has left the company.

Before joining the General Dynamics/Convair guard force in 1947, Gates served more than nine years in the U. S. Navy, rising to the rank of chief warrant officer. In 1951 he became a guard lieutenant and for almost 10 years has served as a guard captain.

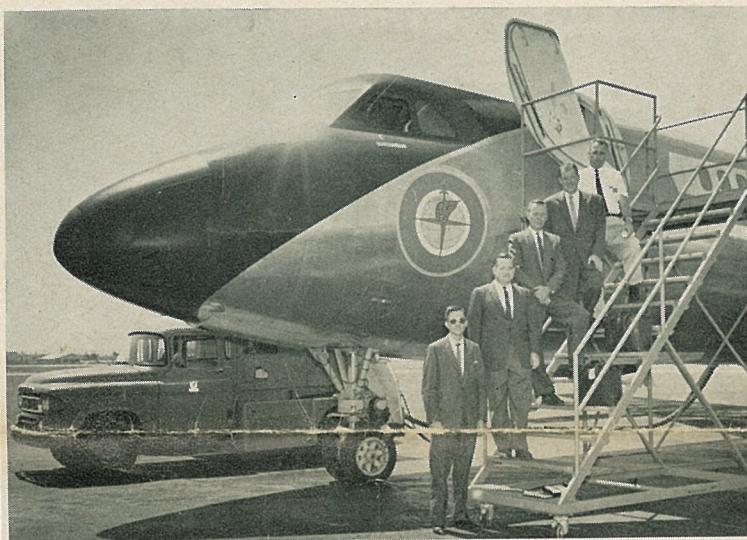
The new division, headquartered in Rochester, New York, produces the Stromberg-Carlson line of telephone equipment for the independent telephone company industry. It was formerly a part of General Dynamics/Electronics.

"In view of the growing importance of the corporation's telephone business," Frank Pace Jr., chairman of General Dynamics Corporation, said, "this division now merits independent status."

John H. Voss, general manager of the telecommunication operation for eight years, has been appointed president of the division and senior vice president of General Dynamics.

In a related move, the corporation announced the unification of the remaining operations of General Dynamics/Electronics with those of General Dynamics/Pomona.

(Continued on Page 2)



FAA CREW—At controls of FAA Convair jet transport on this week's delivery flight was Charles F. Stacy (second from top), supervisory air carrier operations specialist. Other FAA flight officers (from top) are L. T. Robinson, flight engineer specialist; Stacy; J. E. Smith and A. J. Bolster, both instructor/pilots; J. R. Kempf, chief of air carrier operations branch, FAA training center, Oklahoma City. Not shown are Glen Schroeder, lead flight engineer, and C. L. Johnson, flight engineer.

Two Air Force Captains Report For Year of Duty at GD/Convair

Two Air Force officers reported to General Dynamics/Convair last week to begin their year under the Education-with-Industry program.

Capt. David L. Keller and Capt. Dewey K. K. Lowe are now becoming acquainted with all industrial relations functions and engineering employment. During the next year they will spend time in every department of GD/Convair under a schedule coordinated by educational services department.

They were welcomed to their new assignment at a staff meeting of J. H. Famme, division general manager, last Tuesday, then taken on a tour of the San Diego area during latter part of the week.

The continuing Air Force training program concentrates on industrial planning and procurement operations on an executive level within the company to which officers are assigned. In addition, they spend a week or two during

(Continued on Page 2)

Flight Officers For FAA Train As 880-M Pilots

Federal Aviation Agency flight officers flew FAA's Convair 880-M jetliner from San Diego this week nonstop to Oklahoma City, Okla., headquarters for the agency's ground school and flight training operations.

Delivery flight on the Convair jet transport concluded an 80-flight-hour pilot training program which has been under way at General Dynamics/Convair since the plane was officially accepted last month.

The 880-M will be used in training FAA inspectors, who, after extensive ground and flight courses, become specialists on Convair jetliners. These inspectors, in turn, examine and certify airmen of air carriers utilizing Convair jetliners. Domestic airlines now operating Convair 880s or 880-Ms include Delta, Trans World, Northeast, and Alaska.

The FAA 880-M also will be used for testing purposes. The first test series starts this week (Sept. 15) at the National Aeronautical Flight Experimental Center, Atlantic City, N. J. It is part of the overall flight safety program in progress under direction of FAA administrator, Najeeb Halaby.

Under study at the Experimental Center will be retardation effects of slush and standing water on a runway during take-off and landing.

A stretch of runway 1,000 feet long and 50 feet wide will be sprayed with layers of crushed ice between half an inch and 1½ inches deep. The 880-M will be put through deceleration runs and takeoffs on the test strip at different weights and different slush depths.

Braking runs at different speeds under different runway conditions will be included. Results will help FAA determine how much additional runway is required for jet transports operating under similar bad-weather conditions.

This week's delivery flight is a continuation of the busy delivery schedule met during the last month at General Dynamics/Convair. Within the last few weeks Convair jetliners were delivered to Swissair, Alaska Airlines, Japan Air Lines, and Trans World Airlines.

Airworthiness type certificate for the Convair 880-M, advanced version of the basic Convair 880, was issued by the FAA in July.



WELCOME—H. W. Rubottom, chief of educational services at GD/Convair (left), shakes hands with Capt. D. L. Keller as he and Capt. Dewey K. K. Lowe (right) arrive at San Diego for year tour of duty. Looking on is R. H. Nall, educational services supervisor.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due during the period Sept. 1 through Sept. 15.

Twenty-five-year: Dept. 31, J. B. Sterling; Dept. 188-0, R. T. Scott; Dept. 280, S. M. Shepard; Dept. 401-4, H. A. Daw, C. J. Spitz.

Twenty-year: Dept. 6-05, J. F. Krajewski; Dept. 14-4, B. M. Higgins; Dept. 25-3, H. F. Lee; Dept. 31, M. G. Osborn, E. L. Rainbolt, F. J. H. Stolte; Dept. 48-51, S. W. Enstad; Dept. 91, A. W. Lutz, W. J. Taylor, Ralph Weir.

Dept. 100-5, George Tahan; Dept. 115, K. W. Camp; Dept. 120, J. P. Hood; Dept. 123, C. R. Cox; Dept. 138, F. J. Hull; Dept. 141-1, E. H. Horstman; Dept. 145, H. L. Graham, H. C. Tice; Dept. 171, F. G. Brown, V. A. Brown; Dept. 218, H. C. Griffin; Dept. 400-1, A. F. Koritnik; Dept. 407-4, Arling Berg.

Fifteen-year: Dept. 6, R. E. Craig Jr., W. H. Mollering, K. J. Rogers; Dept. 44-4, Maria H. Bakke; Dept. 45-1, E. S. Baumann; Dept. 48, C. H. Camp Jr., S. D. Hickey, Dorothy G. Sparks, H. P. Sutherland; Dept. 120, Anne L. Gale; Dept. 137, Astolfo Lucero; Dept. 138, F. R. Sparling; Dept. 160, P. W. Byrd.

Ten-year: Dept. 1-41, C. E. Root; Dept. 3-3, J. E. Hall; Dept. 6, L. P. Crawford, W. R. Ginsky, J. P. Landis, Andrew Segal, M. O. Starr, Lydie R. Thompson, F. B. Young; Dept. 8-4, W. B. Heller; Dept. 14-7, G. L. Chavez; Dept. 15-6, W. A. Polakowski; Dept. 16-7, Aline B. Vigneault.

Dept. 21-3, R. W. Briscoe; Dept. 25-1, N. D. McFarland, M. D. Palmer; Dept. 28-1, A. M. Street; Dept. 34-5, M. A. Grove; Dept. 44-5, Olivia R. Rustvold; Dept. 46-0, E. R. Kranz; Dept. 48, W. M. Beresford, Luella Jasper; Dept. 68-0, A. R. Vollmecke.

Dept. 95-3, E. C. Waidler; Dept. 97-7, Myrl S. Cleveland, Teresa M. Gookin; Dept. 101, G. B. Mason Jr.; Dept. 128, Rosa H. Manuel; Dept. 133, Nellie S. Castillo; Dept. 141-1, R. P. Brungard; Dept. 143, Fela C. Gomez.

Dept. 192-5, Margaret J. Cox, Marie R. Cwiek; Dept. 201, Albert Castiglione; Dept. 215, Marie S. Miller; Dept. 271, R. L. Jackson; Dept. 400-1, J. R. Crothers; Dept. 401, C. A. Dietrich, W. R. Marine Sr., D. P. McNamara, E. F. Rogers, R. G. Story.

EDWARDS RS

Twenty-year: Dept. 318-3, C. R. Park.

GD/ELECTRONICS

Twenty-year: Dept. 5, W. R. Mandel; Dept. 6, S. O. Adams.

Ten-year: Dept. 8, R. L. Saunders.

Retirements

CONVAIR

BAHL—Alex J., Dept. 3-1. Seniority date April 16, 1951, retirement effective Aug. 31, 1961.

BURNS—Frank, Dept. 91-7. Seniority date May 8, 1941, retirement effective Aug. 31, 1961.

CYRUS—Clotilde M., Dept. 14-1. Seniority date May 4, 1951, retirement effective Aug. 31, 1961.

FURBISH—Clarence W., Dept. 25-9. Seniority date July 31, 1950, retirement effective Aug. 25, 1961.

GREGOVICH—William B., Dept. 31. Seniority date Dec. 10, 1940, retirement effective Aug. 31, 1961.

HOLSTEIN—Cecile S., Dept. 101. Seniority date Jan. 29, 1952, retirement effective July 31, 1961.

MARTIN—Elwood G., Dept. 192-6. Seniority date Oct. 7, 1946, retirement effective Aug. 31, 1961.

MATHEWS—Wade H., Dept. 400-5. Seniority date April 10, 1951, retirement effective Sept. 1, 1961.

McGUFFIN—Lester G., Dept. 401. Seniority date Dec. 3, 1935, retirement effective Aug. 31, 1961.

SCHILLER—Nathan, Dept. 15-6. Seniority date July 25, 1951, retirement effective Aug. 31, 1961.

WASSERMAN—David, Dept. 3-1. Seniority date May 14, 1951, retirement effective Aug. 25, 1961.

PALMDALE

HARDING—Thurston T., Dept. 325-1. Seniority date Jan. 21, 1957, retirement effective Aug. 31, 1961.

SWITZENBERG—Martin J., Dept. 325-1. Seniority date Dec. 8, 1955, retirement effective Aug. 31, 1961.

Births

CONVAIR

ANDREWS—Son, 9 lbs., 14 oz., born Aug. 17 to Mr. and Mrs. E. W. Andrews, Dept. 160.

ATHERTON—Son, Charles G., 10 lbs., born July 23 to Mr. and Mrs. A. M. Atherton, Dept. 91.

BENAVENTE—Daughter, Shirley Joyce, 7 lbs., 9 oz., born Sept. 6 to Mr. and Mrs. C. S. Benavente, Dept. 128.

BUSSELL—Daughter, Carla Jean, 7 lbs., 1½ oz., born Aug. 12 to Mr. and Mrs. A. B. Bussell, Dept. 146.

McBRIDE—Son, John Lee, 7 lbs., 1 oz., born Aug. 1 to Mr. and Mrs. F. J. McBride, Dept. 192.

MURRAY—Daughter, Brenda Kay, 7 lbs., 7 oz., born July 8 to Mr. and Mrs. F. W. Murray, Dept. 146.

QUARRY—Daughter, Sherry Lynn, 8 lbs., 5 oz., born Aug. 21 to Mr. and Mrs. R. E. Quarry, Dept. 192.

Deaths

CONVAIR

HAMLIN—Donnie Wade, Dept. 119. Killed in auto accident Sept. 2. Survived by wife, Carolyn Sue.

WETTERBERG—August, Dept. 144. Died Aug. 27. Survived by wife, Pauline G., three brothers, three sisters.

WOODWARD—Ward E., Dept. 401. Died Aug. 30. Survived by wife, Katherine.

Promotions

CONVAIR

Promotions to or within supervision effective Aug. 28.

Dept. 3-1, Industrial Relations: To guard captain, J. M. Aguilar.

Dept. 44-0, Material Control: To chief of material control, D. E. Flanders.

Dept. 48-50, Quality Control: To inspection supervisor, R. A. Woods.

Dept. 192-4, Manufacturing Control: To M/C asst. foreman, J. M. Kenna.

Jr. Achievement Groups Forming

Teen-age boys and girls of General Dynamics/Convair families may sign now to take part in the Junior Achievement program this year.

Application forms are at employee services offices, Plant 1 and 2, said J. A. Gliebe (Dept. 249), JA board of control chairman for GD/Convair Management Club. Boys and girls between ages of 15 and 19 will learn how to conduct a business, from production to sales, in groups directed by adult advisers.

GD/Convair Management Club will sponsor one group this year. Newly-appointed JA committee members are W. T. Toon (Dept. 25), chairman; H. G. Barnes (Dept. 292), in charge of sales; A. J. Krumweide (Dept. 93-8), accounting; John Woodhead (Dept. 149), production adviser.

The committee has been attending a series of briefings with San Diego Junior Achievement Committee coordinators before the program gets under way, probably within the next month. Junior Achievement groups have a choice this year of meeting locations, either at the San Diego headquarters or in La Mesa. Preference may be indicated on application forms.

Two Captains Report For Year of SD Duty

(Continued from Page 1)

the year observing operations of other divisions of the Corporation and other industries in the area. They will spend a week at Aerospace Systems Hdqrs., AFSC, Los Angeles, Calif., in the near future.

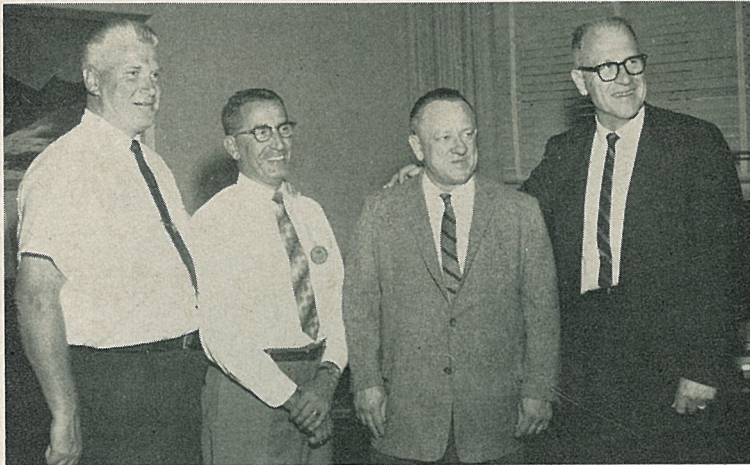
Captain Keller holds a BS in business administration from Oregon State College and an MS in industrial administration from AF Institute of Technology.

He spent one tour of duty in the service during World War II and has been in the Air Force continuously since 1951. He has held positions of administration, squadron adjutant, production control, and aircraft maintenance officer. He comes to GD/Convair from 11th Bombardment Wing Hdqrs., Altus AFB, Okla.

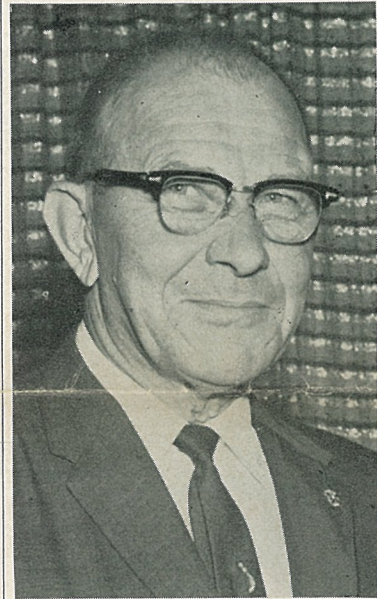
Capt. Lowe was graduated from University of California with a BS degree and from University of San Francisco with a degree in law. He was admitted to the California Bar in 1953.

He has been in the service since 1943 and won his pilot's wings in 1944. He has served as adjutant and personnel officer, and later, executive officer of a tactical bombardment squadron. More recently he has been a training officer. Latest assignment was with the 1st Aerial Tracking Squadron (TAC) at Biggs AFB, Texas.

Arrangements for the officers' program at GD/Convair are coordinated by Mark Saunders of educational services.



SPECIAL OCCASION—F. H. McLaughlin, GD/Convair factory manager, left, and R. A. Neale, manager of operations, flank latest veterans to receive 25-year service emblems; D. E. Palumbo, Dept. 148, second from left, and Daniel Whorton, Dept. 117. Photo below shows B. A. Buffat, Dept. 288-2, receiving his 25-year emblem from W. J. Martin, manager of quality control.



PLANK OWNER—R. F. Weidner, GD/Convair fabrication inspection supervisor, Dept. 188-2, received his 35-year service emblem recently.

Blood Donors Restore Credit With 231 Pints

Plant 1 blood donors turned out in full force at General Dynamics/Convair's blood collection Aug. 24 to put the division's blood supply back into business.

A total of 231 pints was collected when the bloodmobile visited the plant for the first time in two months. This was the largest collection this year, said Ken Wulfemeyer of GD/Convair employee services.

Altogether, 360 first-shift volunteers at Plant 1 signed up. Of these, 82 didn't report at collection time and 47 were rejected.

The August collection will pull GD/Convair's credit at the San Diego Blood Bank out of the red and carry through until the next bloodmobile visit, Wulfemeyer said, in thanking all who donated.

Blood credited to GD/Convair's account with the Blood Bank is available to GD/Convair and GD/Electronics people, located at the San Diego plant, and members of their immediate families.

CON-TRIB OKAYS \$2,200 DONATIONS

Contributions approved at the Aug. 23 GD/Convair Con-Trib-Club Committee meeting saw \$500 go to Pathfinders of San Diego, Inc.; \$700 to San Diego County Hospital for repair and maintenance of television sets in Vaulain Home; and \$1,000 to United Jewish Federation.

GD Activates New Division

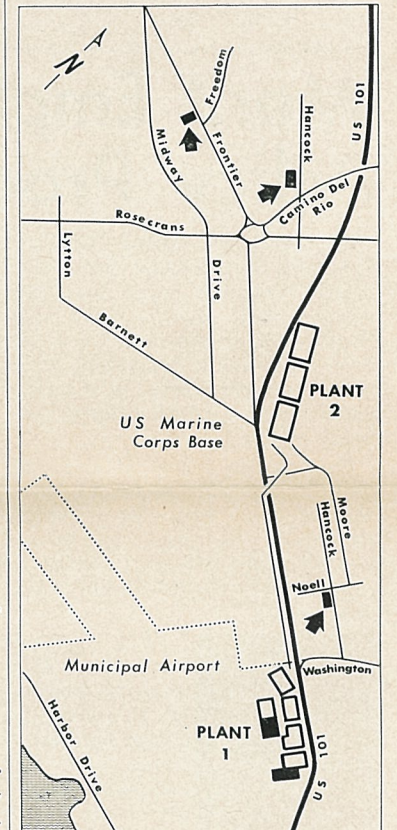
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General Dynamics/Electronics, which has operations in both Rochester and San Diego, Calif., produces electronic equipment for defense, industry and the home. General Dynamics/Pomona, headquartered in Pomona, Calif., produces the Advanced Terrier, Tartar, Redeye and Mauler missile systems, and advanced defense electronics systems.

The combined operation will be headed by Charles F. Horne as president. Horne is president of General Dynamics/Pomona and senior vice president of General Dynamics.

"This most recent move," said Pace, "is a continuation of the consolidation of electronic activities begun earlier this year. By combining the direction and competence of these two electronics-oriented divisions, we feel we can strengthen our position in a fast-moving industry both in end products and in support operations to weapons systems to provide more rapid development and greater flexibility."

Pace emphasized that existing operations will be continued at their current geographical locations.



INVOLVED—Sketch map shows locations at San Diego of GD/Electronics personnel affected.

Saturday Hours Set For Salvage Yards

Salvage yards at GD/Convair and GD/Astro will be open for employee sales during the next four Saturdays on the following schedule:

GD/Convair—Sept. 16 and 30. GD/Astro—Sept. 23 and Oct. 7.

AIR EXPLORERS

Air Explorers Squadron 340, GD/Convair Management Club-sponsored troop, has shifted weekly meeting nights to Monday.



NEW POSTS—Larry Lawson (left) of GD/Convair and Art Wood of GD/Astronautics assume new positions as vice president and president of San Diego Area Council, National Management Association, at first officers' meeting last month. Both are past presidents of respective division Management Clubs.

General Dynamics NEWS

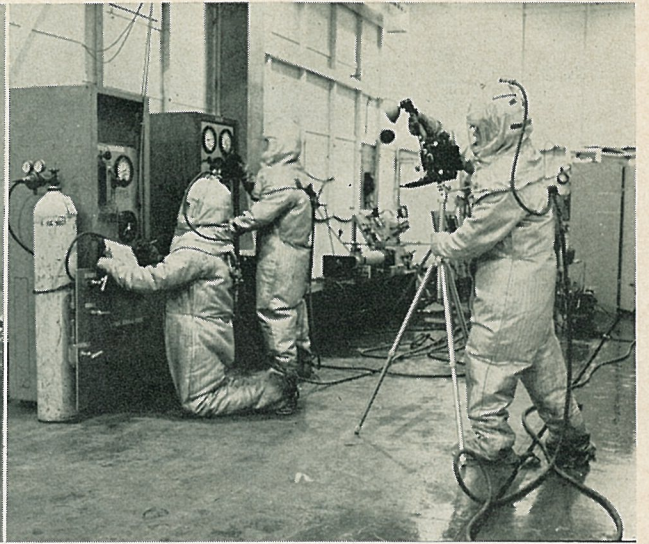
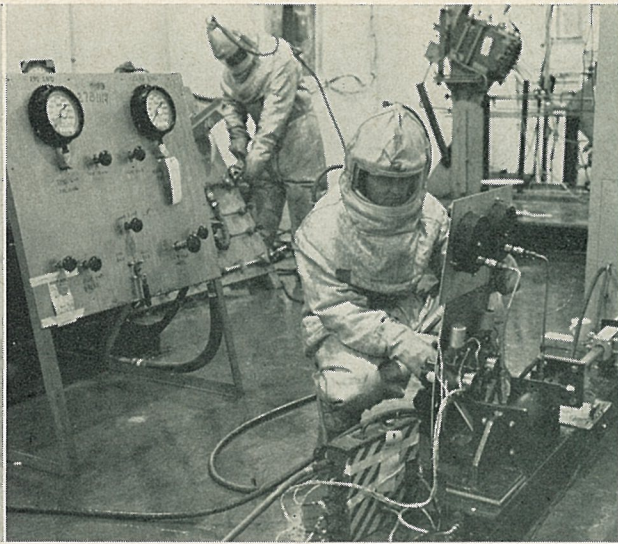
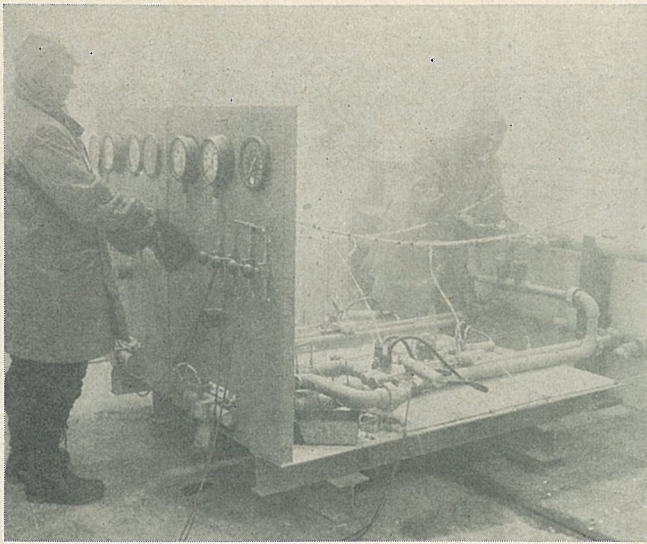
Successor to "Convairity" (which for 13 years served plants of the former Convair Division of General Dynamics Corporation). West Coast and Texas editions of the NEWS are published bi-weekly by General Dynamics with editorial headquarters at San Diego 12, Calif., P.O. Box 1950, Telephone CYPRESS 6-6611, ext. 1071, Logan Jenkins, editor-in-chief.

Approximate current total circulation, over 70,000. Astronautics Editorial Offices, Bldg. 8, GD/Astronautics, Mail Zone 130-01, P.O. Box 1128, San Diego 12, Calif. Telephone BRWNING 7-8900, ext. 3322. Staff: Bryan Weickersheimer, news editor; Willard Harwood.

Convair Editorial Offices, Bldg. 32, Plant 1, GD/Convair, Mail Zone 1-320, P.O. Box 1950, San Diego 12, Calif. Telephone CYPRESS 6-6611, ext. 1071. Staff: Grayce Fath, Helen Pemberton.

Fort Worth Editorial Offices, Col. 72, Admin. Bldg., GD/Fort Worth, Mail Zone 0-50, P.O. Box 748, Fort Worth 1, Texas. Telephone PERSHING 8-7311, ext. 2961. Staff: Dave Lewis, news editor; Louise Sutton, Mary Beck.

Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone NATIONAL 9-5111, ext. 6226/5279. Staff: James Combs Jr., news editor; Carol Colbert, Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone LONE STAR, Texas, 2211, ext. 424.



WEATHER GAMUT—"Shroud environmental chamber" permits GD/Astronautics to produce variety of weather extremes. In center photo, high humidity (over 95 per cent) is achieved, while at left parka-clad technicians manipulate valves at 65

degrees below zero. At right GD/Astro Lensman Walter Gault dons "hot suit" for photo assignment. Incidentally, if desired, chamber can "rain" at rate of five inches an hour!

Unique 'Gas Freezing' Know-How Developed by GD Engineers

Feasibility of a revolutionary method of eliminating rocket gases from chambers which simulate the conditions of outer space was developed by General Dynamics/Convair engineers during a year-long subcontract just concluded for its sister division, General Dynamics/Astronautics.

This work, which has resulted in recent modification of General Dynamics/Astronautics huge space chamber, will duplicate the environment of outer space. The cryogenic pumping system, as it is called, will, when put in use, eliminate all the gases emitted during the dynamic testing of small rocket engines within the chamber. This permits rocket engine operation in the simulated low pressure of outer space.

"Results of this work place General Dynamics/Convair's knowledge in the cryo-pump area ahead of the space chamber industry," said C. L. Jackson of General Dynamics/Convair who headed this program.

"The challenging engineering aspects in development of this system made the task particularly inviting. Further, it offered General Dynamics/Convair an opportunity to increase its technical capability in this rapidly expanding cryogenic field," he continued describing the original contract. This was obtained for General Dynamics/Convair through a perimeter engineering sales effort in the spring of 1960.

"Although the principle of cryo-pumping is not new, application of the cryo principle for removing large quantities of gas from a relatively low pressure region on such a large scale has never before been accomplished," he said.

(The cryo-pump principle is the freezing of gases into ice thereby creating an evacuated area.)

Present modification of the chamber, completed last month, does not so far include the cryo-pumping system, but design provisions are such that modifications can be made incorporating the cryo-pump capability at any time, he explained.

Modifications as they now stand, add a 5,000-gal. insulated storage tank for liquid nitrogen,

provision for liquid hydrogen, a cold wall within the chamber, the automatic operational control system, and all interconnecting systems.

"The facility now provides an environment of very low pressure and cold of outer space, and the solar radiation of the sun—conditions like those found at high altitudes (up to 100 miles). The liquid nitrogen pumped through the cold wall lining brings the temperature in the chamber to as low as -320-degrees F. When liquid hydrogen is used it will produce a temperature of -420-degrees F.," said O. O. Haroldsen of General Dynamics/Astronautics aerophysics laboratory which directs space environment testing.

"One of the most remarkable achievements in the entire program was fabrication and installation of the cold wall assembly inside the vacuum chamber. This work involved some 600 weldments and connections within the evacuated area, which when exposed to high vacuum during initial tests, operated with zero leakage. This is very much like building a prototype airplane which required no changes after its first flight test," said Jackson after checkouts of the new installation. This fabrication and installation was done by experimental factory under the direction of N. R. Keough, general foreman, and John Wasem, assistant foreman.

When this project was first initiated a year ago at General Dynamics/Convair, Jackson was given divisional responsibility to head an internal project team. Key members were: J. W. Anderson, engineering technical; M. A. Grove, material; N. O. Loven and R. H. Hurd, engineering design; Keough, manufacturing; H. A. Smith, plant engineering; T. P. Solberg, accounting; E. J. Steeger, engineering test; G. R. Vetter, contracts. R. E. Pearce of engineering assisted Jackson throughout the program.

Haroldsen monitored design, development, and installation at the Astro site.

Credit is due all team members for success of the program, said Jackson.

Coast Will Return To Standard Time

California plants of General Dynamics Corporation will return to standard time the last Sunday in September (Sept. 24). Clocks will be put back an hour at 2 a.m. of that day.

Hustler No. 21 'Graduates' to Striking Force

Production conversion B-58 No. 21 joined 43rd Bomb Wing's tactical striking force this month following a successful four-hour acceptance flight.

Lt. Col. W. R. Griner, pilot; Capt. R. E. Simmon, bombardier-navigator; and Capt. P. P. Markum made the flight to Carswell AFB.

Another production conversion Hustler—No. 27—completed company flights this month and was being readied for Air Force acceptance flights.

No. 27 is scheduled for delivery to 43rd Bomb Wing in September. This will bring the conversion program to a halt "for the time being."

No. 22, last of the test Hustlers slated for conversion to tactical status, is still being used by Air Force at Edwards AFB to demonstrate flight characteristics using the two-component pod. A return date has not been established.

Thus, delivery of No. 27 this month virtually winds up the conversion program—on schedule.

"Splendid cooperation from Dept. 63 supervision, quality control and Air Force people, and from personnel in departments involved is helping us to finish on schedule," said C. N. White, superintendent B-58 product field operations.

DEANE DAVIS CITED FOR 'PROJECT SCORE'

An Air Force citation for his part in "Project Score" has been awarded Deane Davis, General Dynamics/Astronautics chief project engineer for Centaur.

The "Score" project involved the "talking satellite" which broadcast President Eisenhower's Christmas message in 1958.

The citation, presented by Lt. Gen. Bernard A. Schriever, Commander, Air Force Systems Command, praised Davis' "outstanding technical ability, inspiring leadership and selfless devotion to duty," and stated that his accomplishments "reflect great credit upon himself and his company."

GD/Astro Son Tapped For Naval Academy

A presidential appointment to the U. S. Naval Academy, Annapolis, Md., has been received by John Paul Grando Jr., son of GD/Astro's J. P. Grando, Dept. 141-1.

Young Grando will graduate from Kearny High School next June, and report to Annapolis a few days after his 18th birthday in July. His father, who retired from the U. S. Marine Corps as a captain, is a former Marine aviator.

Astro Technicians Don 'Hot' and 'Cold' Costumes For Weather Testing

Silo launch equipment similar to that being installed in Atlas bases across the nation recently ran a gamut of weather conditions in a week-long series of tests conducted by General Dynamics/Astronautics.

The test items, with support equipment to help them duplicate their normal functions, were alternately cold (minus-64°), hot (plus-165°), and humid (95 per cent) in an around-the-clock 15-test program conducted at the Point Loma Test Site, San Diego.

Tests were held in GD/Astronautics "shroud environmental chamber" which is large enough to test an entire Atlas missile and its handling trailer, but is also utilized for component testing.

Behind the program were Air Force qualification tests to prove the parts being tested would stand up and operate under extremes beyond those normally encountered at launch site. To be

answered were such questions as: would lubricants perform equally well in sub-zero temperatures and extremes of heat and humidity? Would the expansion and contraction of metals under these conditions alter the part's effectiveness? Would gaskets continue to function under varying conditions?

To perform the tests, GD/Astronautics technicians were forced to move into the chamber and operate equipment. They wore foul weather gear for cold and special asbestos suits complete with air lines for cooling and breathing under conditions of intense heat and humidity.

Jay Lynch, test engineer, and Julian Gotkiewicz, both Dept. 565-3, conducted the program.

R. C. Hinck, Dept. 566-1 group engineer, heads Point Loma operations, with William Valentine, foreman; Jim Thornton and V. H. Lowe, assistant foremen, both Dept. 756, in charge of environmental testing.

Mfg. Research Team Attacks And Solves Production Hitch

In addition to the steady stream of new devices and techniques constantly evolved by General Dynamics/Astronautics applied manufacturing research and process development (Dept. 290), the group is often called upon to investigate production trouble spots.

A capable staff of Dept. 290 specialists in electronics, welding, metallurgy, chemicals, plastics, materials and packaging stands ready for consultation to expedite achievement of efficient, on-schedule production.

Recent example of the service provided is seen in the case of an electronic component for GD/Astro's Azusa tracking system.

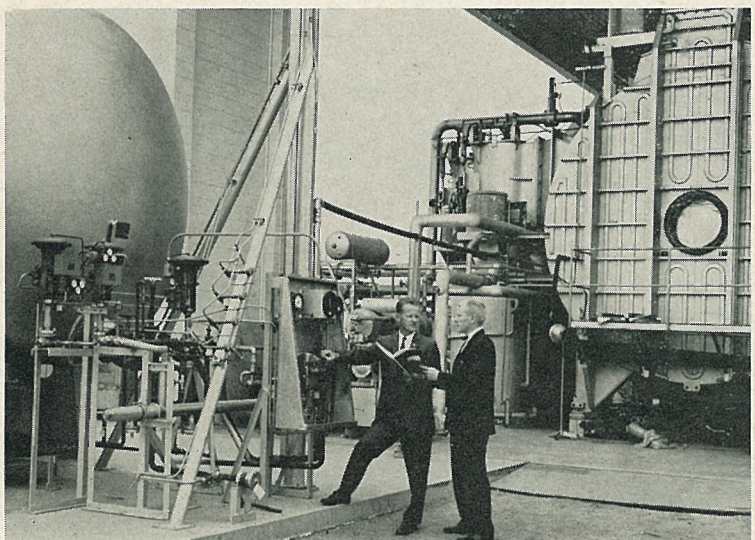
An electrolytic copper water

jacket component for Azusa was electroplated with silver prior to final assembly. It was noted that the silver plate had a tendency to peel off during subsequent soldering operations. Production ground to a halt, and a team from applied manufacturing research and process development tackled the problem. They recommended that the component be plated with a thin layer of nickel before the silver plating stage.

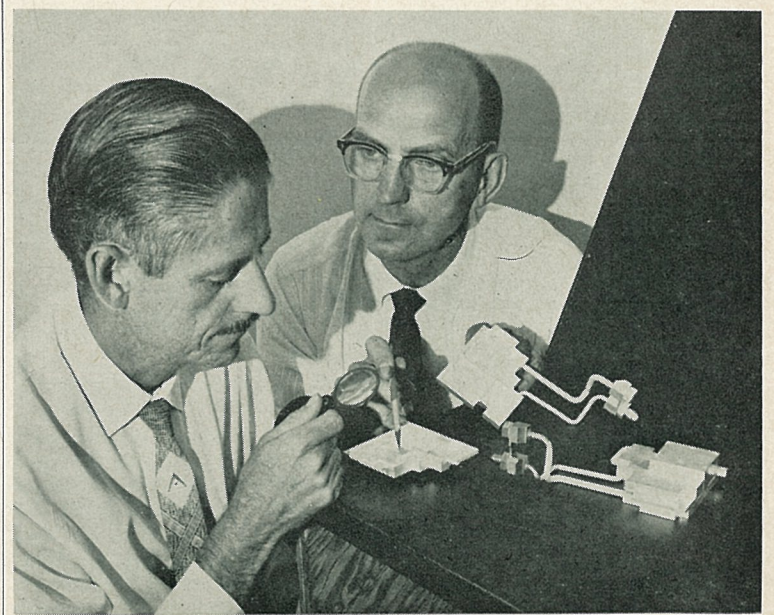
The peeling problem was eliminated.

But study did not stop there. At present, extensive research is being pursued on a process of silver brazing to replace the soldering step.

Goal? A more reliable product.



SPACE ADVANCE—C. L. Jackson of GD/Convair and O. O. Haroldsen of GD/Astro inspect equipment recently installed by GD/Convair at GD/Astro's Kearny Mesa research laboratory site to advance capability of huge space chamber (far right).

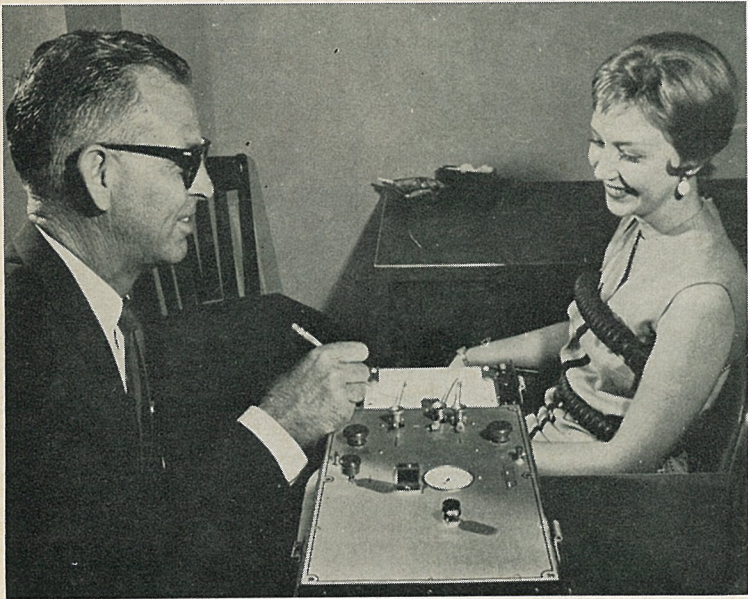


CLOSE LOOK—Ozzie Sotirhos, GD/Astro materials process engineer, examines plated water jacket component as C. P. Rolla, Dept. 290, explains how applied manufacturing research team solved plating problems on item.



STEEP TRAIL—Young mountaineers of GD/Convair Management Club-sponsored Explorers Squadron 340 assemble packs (far left) and take breather before daily onslaught on rugged High Sierra mountain passes (center). At right, trail break

rests weary feet during two-week mountain climbing trek. Five 12,500-ft. passes, some inaccessible without ropes, were scaled. Day's stints averaged 5 to 15 miles, depending upon heights attacked.



PREVARICATING PAT—Lie-detector needles danced dizzily when pretty Pat Pierce, GD/FW Dept. 8, answered "yes" to question: "Are you Doris Day?" Interrogator is L. D. Criswell of GD/FW Dept. 28, polygraph expert.

To Tell the Truth

Part-Time Polygraph Hobbyist Says Even White Lies Don't Pay

A lie-detector does lie—but not very often—according to L. D. Criswell, General Dynamics/Fort Worth process analyst and part-time polygraph expert.

"Mental cases, alcoholics and dope addicts can sometimes fool the machine because their nervous systems differ from the normal person's," Criswell said.

"But the normal person has no control over his nervous system, and when he's not telling the truth it shows up on the machine as increased blood pressure or blood flow, or a change of heart beat."

A few individuals, improperly questioned, are capable of rationalizing a "correct" answer.

"When a suspect in a murder case answered 'no' to the question 'did you kill your girl friend, Mary?'" the machine showed him to be telling the truth. But the man was later convicted on overwhelming evidence."

How did he "outwit" the polygraph? "Well," the convicted man admitted, "at the time of the murder, I had two girl friends

named Mary."

Pathological liars, people who delude themselves into believing their own untruths, have also been known to fool the machine in rare cases.

But these are exceptions. Approximately 97 per cent of all people cannot fool the machine with the tiniest "white" lie.

His interest in this hobby dates back to 1947, when he and about 500 other Atomic Energy Commission security officers were routinely tested.

Nowadays, his work in the field is limited to frequent calls from county officials and occasional demonstrations, which often produce interesting results.

At a Lion's Club demonstration he asked a young lawyer who spent much of his spare time filing income-tax returns, "Have you ever fudged a little on an income tax return?" The answer literally put the delicately balanced lie-detector out of commission!

While many of Criswell's efforts have helped establish innocence, his altruistic efforts sometimes backfire.

Criswell worked many months to set up a test for a life-terminer who incessantly claimed his innocence. "The man was so convincing it took almost an hour to decide he wasn't telling the truth," he said.

ALLWARDT TRANSFERS TO ASTRO DIVISION

V. L. Allwardt, chief of engineering flight test at General Dynamics/Convair, has transferred to General Dynamics/Astronautics, effective last week.

Allwardt joined Convair division in flight research in 1943 and moved to Edwards AFB as flight test group engineer at the Convair facility in 1953. He was chief flight test group engineer there from 1955 until he succeeded G. E. Putness as project manager two years later.

He returned to San Diego in late 1959 as senior flight test group engineer in the commercial transport program.

'Thrilling'

Plane Piloted To Safe Stop In Vacant Lot

"Really thrilling," is the comment of Hans Busch, General Dynamics/Astronautics task control planner (Dept. 521-2), who brought his disabled aircraft in for an emergency landing in a vacant lot recently.

But when Busch says it, he refers not to the hair-raising landing, but to the response of bystanders—perfect strangers—who helped prepare the ship for its return to the airfield.

The adventure started shortly after noon on a Sunday. Busch had lifted his Stinson Voyager from Montgomery Field and climbed to 400 feet when the engine suddenly slowed to idle speed.

"I advanced the throttle and



BACK IN ACTION—Hans Busch sits in cockpit of Stinson Voyager in which he made recent forced landing in Linda Vista lot.

applied carburetor heat—all the standard procedures," said Busch. "Nothing helped."

Nearest spot for a forced landing was a Linda Vista school yard, and Busch headed for it. Then he spied a vacant lot just beyond and coaxed his sluggish craft toward it to avoid the fences ringing the school yard.

"I telephoned four or five members of my Civil Air Patrol unit," he said. "Within an hour over 15 persons, many of them strangers, were helping me drain the fuel from the plane and remove the wings."

"There were no 'bosses' on the job," he added. "They just arrived and started working. About 7 p.m., one of my unknown helper's wives even brought up food—sandwiches and lemonade."

Only six hours after the trouble started the plane was back at Montgomery Field, fully reassembled. Two days later it was flying again.

Busch, who has been in this country for 10 years, is a veteran pilot. He has flown since 1943 when he became a military pilot in his native Germany flying fighters, dive bombers and jets.

General Dynamics Sons Prove They Can Take It

Twenty-four tired, disheveled boys, all General Dynamics sons, dropped packs and headed for the showers late last month after two weeks of scrambling and clawing their way over rugged High Sierra passes.

On their first mountain trip in five years, Air Explorers Squadron 340, sponsored by GD/Convair Management Club, sought out rough regions rarely attempted by expert climbers. Thirteen of the 14 days found them above 10,000 feet, sunburned by day, shivering under ice-coated sleeping bags at night.

Gene Boyd (Dept. 197), squadron adviser, said, "It made men of us all. Every boy felt he had accomplished something worth while in proving himself."

Only those judged in top physical condition and able to take care of themselves were allowed to go. A night's stop at Edwards AFB gave them a last rest in beds before they headed into the mountains above Bishop the weekend of Aug. 4. From there they hit the trail cross-country—and cross-country meant across the rim from one high pass to another at 10,000 to 14,000 feet. For days they climbed over loose shale, around huge boulders, breaking precipitous trails, pulling themselves by ropes up sheer cliffs.

Heads were counted each night at the predetermined campsite to be sure no stragglers had been left on the trail, said Boyd. The boys, 17- and 18-year-olds (youngest was 15) split up in twos and threes to mark out their own routes, work their own ways each day across the rough country. It took eight hours to climb Harrison Pass alone.

Balanced, dehydrated meals, already packaged in plastic, were carried by each boy. Typical breakfast fare was eggs, spam, potatoes, hot chocolate. High energy lunch of peanuts, raisins, candy bar, drink was munched on the trail. Soup, biscuits, beans or stew, potatoes, salad and tea filled hungry mountaineers around evening campfires. Their second-half food supply was found hanging in a pre-arranged tree near Bullfrog, packed in from Independence.

Carrying the bare necessities, their one change of clothing was washed, along with themselves, in icy mountain streams; loose shoe soles torn by rocky trails were clamped back with small bolts; ragged pants were patched as best they could by firelight. Each boy sheltered himself from sharp winds and constant rain with ground covers and plastic sheets draped over trees and rocks as rude tents.

"All showed most amazing morale," praised Boyd, who with Bill Aston (Dept. 138) made the over 100-mile trek with the boys. Third adult leader, Jim Megargee (Dept. 48), was only casualty. He was packed out midway when his feet became too sore to travel.

"By the time we ended the trail

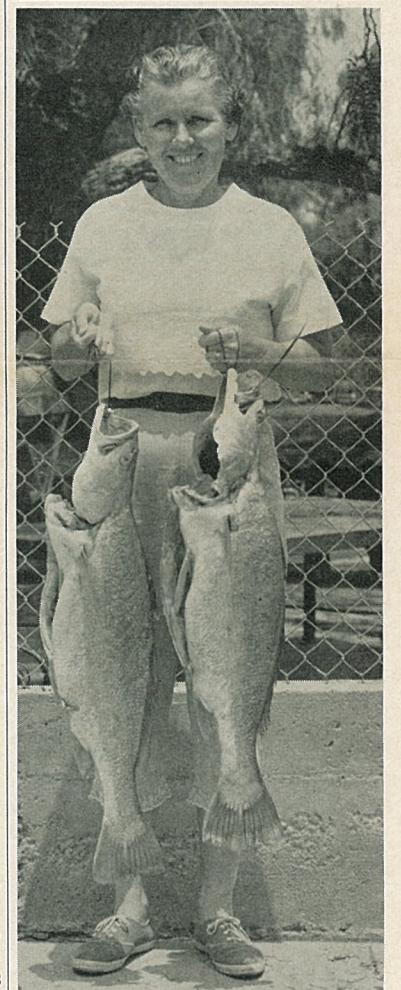
PROCESS ANALYST FINISHES COURSE

Howard E. Pohlenz, GD/Astro Dept. 270-1 process analyst, recently completed a 10-day course in statistical methods in industry at the University of California, Los Angeles.

at the foot of Mt. Whitney we felt each had passed the supreme test of leadership, ability, calmness, and courage," Boyd summarized.

Next year's rough summer outing will take the troop back to the rapids of either the Rogue or Snake Rivers, with another mountain jaunt the following year.

Recreation associations at GD/Convair and GD/Astronautics chipped in to pay expenses above the \$25 each boy paid for his own food supply. Medical supplies for emergencies which never came were sent along by the company.



GOOD CATCH—Ruth Menzie, wife of GD/Convair's Bob Menzie, holds big corvina pulled out of Salton Sea, Calif., recently.

FEMININE ANGLER LANDS BIG CORVINA

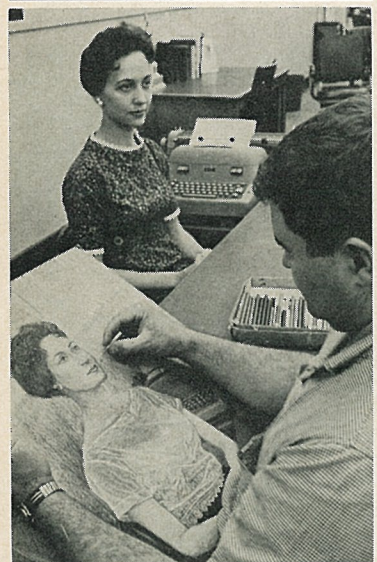
General Dynamics anglers in California looking for good fishing spots are turning more and more to Salton Sea, Bob Menzie, CRA Fishing Club commissioner, reports.

His wife, Ruth, pulled in a couple of big corvina to take a top club award recently. Her double catch weighed 12½ and 13¼ lbs. respectively and measured about 30 inches long.

She caught them on a 25-lb. monofilament line using mudsuckers for bait.

Corvina, native of the Gulf of Mexico, were transplanted to California's inland sea about five years ago and get as large as 40 lbs., said Menzie. However, the record weight of any registered with the Southwest Anglers Association is 15 lbs., 3 oz.

Besides corvina, other good eating fish in the sea include the smaller sargo, which runs to around 12 inches in length.



LUNCH PORTRAIT—Carl Ronald Thomason, GD/FW Dept. 6 engineering illustrator, is also gifted portrait painter. Above, he completes color portrait of Roberta Chisolm, secretary, during lunch period.

GD/FW Joins With Grumman In Contest For TF-X Business

General Dynamics/Fort Worth and Grumman Aircraft Engineering Corporation will be associated in the bi-service tactical fighter competition, Frank W. Davis, GD/Fort Worth president, and E. Clinton Towl, Grumman president, announced jointly.

The bi-service tactical fighter—designated the TF-X—is planned for use by the Air Force Defense Command, the Air Force Tactical Air Command, and the Navy and Marine Corps.

Robert S. McNamara, Secretary of Defense, established bi-service requirements to develop a single weapon system meeting both Air Force and Navy requirements in order to avoid the cost of separate designs and developments.

Extensive and successful Air Force and Navy weapons system development and production backgrounds of GD/Fort Worth and Grumman complement each other, both Davis and Towl pointed out. They felt confident that basic objectives of the bi-service program could be met by an associated effort.

It is contemplated that General

Dynamics will concentrate on the overall project and Air Force requirements, while Grumman will concentrate on Navy requirements leading to development and production of a true bi-service weapon system.

According to Sept. 5, 1961 issue of "Aviation Daily," the TF-X will "definitely be built."

"Gen. Curtis LeMay, Air Force Chief of Staff, and Adm. George Anderson, Chief of Naval Operations, made the announcement . . . with approval of the Secretary of Defense."

The article continued: "The service chiefs noted that a jointly designed and produced TF-X will save the cost of large, separate development programs, and large-volume production of a single aircraft design will reduce the cost significantly. Estimated total savings for a single program as compared with two designs may be as much as \$1 billion.

"Requests for bids are expected to go out within a few weeks and a contract award is expected very early in calendar 1962."

Active Roles Assigned GD Men at SAE Meeting

Eighteen men from four divisions of General Dynamics Corporation are scheduled to take part in the Society of Automotive Engineers National Aeronautics and Space Engineering and Manufacturing meeting Oct. 9-13 in Los Angeles.

Participating from General Dynamics/Astronautics will be: Larry Granstedt, chief tool engineer, forum panel member; V. G. Melquist, manager of manufacturing development, forum secretary; C. C. Campbell, supervisor of reliability testing, will deliver paper; J. F. Watson, staff scientist, forum chairman; J. C. Fischer Jr., senior flight test engineer, will deliver paper; and Carl Priest, specifications group engineer,

panel member.

Those from General Dynamics/Pomona will include: H. E. Jordan, design group engineer, forum co-chairman; H. F. Sawyer, design specialist, forum secretary; E. D. Heller, value control coordinator, forum chairman; A. H. Dunn, manager of applied manufacturing research and process development, will deliver paper; and T. A. Vogel, senior design group engineer, panel member.

Participants from General Dynamics/Convair include: E. W. Feddersen, director of manufacturing development, forum chairman; J. H. Famme, division general manager and vice president, forum chairman; R. D. Small, group engineer, and G. F. Campbell Jr., design specialist, will deliver a joint paper; and P. E. DiBartola, senior engineer, will deliver a paper.

L. M. Smith, structure group engineer, who will deliver a paper, is the representative of General Dynamics/Fort Worth.

DIVISIONS CONFER ON COST REDUCTION

An inter-division conference on the Employee Suggestion and Cost Improvement Proposal plans was conducted Aug. 28 at General Dynamics/Pomona.

Objective of the conference was to discuss problems common to all the participating divisions and to recommend solutions. Subjects discussed included inter-division interchange of suggestions and their handling, handling of suggestions involving classified information, priority of suggestions, performance reports between divisions, suggestions dealing with union negotiations, and handling of suggestions requiring corporate action.

Participating in the conference were: M. J. Scott of General Dynamics/Fort Worth, A. R. Mosco of GD/Astronautics, and J. M. Langendoen, R. W. Anke and F. J. Fuller of GD/Pomona.

Cards Distribution 'Wild' in Pinochle

The cards went wild while Matthew Fuller, GD/Astro Dept. 771-0, his parents and sister were playing pinochle the hard way (with two decks and no nines) recently.

Diamonds were trumps, and after all meld was on the table it was discovered that each player had a complete run in that suit: an ace, king, queen, jack and ten each.

Vultee Reunion Set For Oct. 21

Notices went out this month to 900 Vultee Field veterans scattered over the country from Long Island, N. Y., to the West Coast reminding them of their 14th annual reunion, Oct. 21-22.

Wes Magnuson of General Dynamics/Astronautics, heading the committee, said 100 replies had been received by last week with more coming in every day.

Site of the annual get-together to reminisce over old times will be the Town and Country Hotel in San Diego's Mission Valley.

On the Saturday program is swimming, games in the afternoon; cocktails and dinner, 6 to 8 p.m.; a men's gabfest at 8:30 p.m.; fashion show for the ladies from 8:30 to 10 p.m.

Helping Magnuson with arrangements are Earl Williams, Art Braidie, Pete Nagy, Norvel Jones, all of GD/Astro. H. A. Smith, GD/Convair chief plant engineer, will head the reception committee.

GD/Astro Son Chosen For Scholar Honors

Anthony Tafoya, son of Tony (Dept. 771) and Teddy (Dept. 220-1) Tafoya of General Dynamics/Astronautics, has been awarded a three-year scholarship at the University of Santa Clara.

His scholarship was awarded by the State Scholarship Commission. Tafoya will major in physics.

EL MONTE PICNIC

General Dynamics employees in the San Diego area who are former residents of Wisconsin are sought for a third annual picnic at El Monte Park Sunday, Oct. 1, from 10 a.m. Information is available from Mary Campbell, group president, at Astronautics, ext. 2303.

Truck Purchased With Con-Trib Funds Helps Unemployed in Spare-time Work

A truck, bought with funds from General Dynamics/Convair and General Dynamics/Astronautics Con-Trib-Clubs, is helping men from correctional institutions keep working while they look for permanent jobs.

Cost of a three-quarter ton stake-body truck was divided between the two Con-Trib-Clubs to continue the non-sectarian work project of the Episcopal Community Service. Each donation amounted to \$1,231.

During the last four years the project has provided temporary

work for men discharged from County Honor Camps until they find permanent employment. Over 400 men were helped out with odd jobs last year, said Rev. A. C. Elcombe, director of the service. The new truck replaces an outworn one used to haul men and tools to such part-time work as painting and repairs, window washing, yard and garden upkeep.

A letter from the Rev. Elcombe said, "I wish we could personally convey our thanks to the employees from whom this money comes."



COMBINATION—XP-81 (first flown by Frank W. Davis, now GD/FW president) bridged shift from propeller planes to jets. It used both types of power.

They Sprouted

Pioneers of '40s Sowed Seeds That Grew Into Deltas of '50s

(This is installment No. 67 of a continuing narrative dealing with General Dynamics products of the past. In the years which this installment touches upon Vultee Field was a division of Consolidated Vultee.)

Vultee Field had "worked itself out of a job" by mid-1944. Manufacture of basic trainers for the Air Force and Navy stopped when the Downey, Calif., assembly line had produced more than 11,000. A reduced factory force turned to making components for planes in production at other plants.

The engineering staff tackled a broad array of research and development projects in new fields—supersonic flight, rocket propulsion, missile guidance. From pioneering work at Vultee Field in 1945-46 came the world's first delta wing aircraft (XF-92, F-102) the western world's first supersonic bomber (B-58), the Navy's first operational anti-aircraft missile (Terrier) and developments leading to the first intercontinental ballistic missile (Atlas).

A research project already under way bridged the shift from propeller-driven planes to craft powered by reaction motors. The XP-81, conceived in 1943 and flown in 1945, used both turbo-prop and independent jet. An all-jet design followed in 1944-45, a proposed Navy night fighter powered with three turbojet engines and having the high subsonic speed of 561 mph.

Early in April, 1945, this entry appeared in the weekly Vultee Engineering Reports: "Work has just started on possible airplanes for supersonic speeds . . . A turbo rocket powered plant seems the most promising at present. Practically no aerodynamic data is available in this speed range, and what there is isn't consistent."

(This was two and a half years before man's first supersonic flight, in the Bell X-1 rocket plane at Muroc, Oct. 17, 1947.)

The Air Force announced a competition in September, 1945, for a supersonic interceptor, capable of climbing to 50,000 feet in four minutes and attaining a speed of 700 mph. At Downey the design problem was turned over to Frank W. Davis, then assistant chief engineer; Adolph Burstein, chief of design; Ralph H. Shick, chief of aerodynamics. Their studies produced a proposal that won a contract in May, 1946, for two airplanes. The design incorporated a swept wing, V-tail and ducted rocket (ramjet) power plant with external liquid rocket motors for takeoff and climb and an auxiliary turbojet for subsonic cruising.

It soon became evident that two

problems would have to be separated and solved independently—design of the unique power plant and development of a supersonic airframe. In November, 1946, the XP-92 contract was amended to provide two programs. One led to extensive laboratory and wind tunnel experimentation with ramjet burners and gasoline-oxygen rockets. A design configuration incorporating these elements reached mockup form in 1948. The other program was confined to aerodynamics and led to the delta-winged interceptors of the '50s.

The XP-92 airplanes (USAF switched from "P" to "F" for fighter designation in 1948) were never built, but an offshoot became the XF-92.

XP-92 design novelties included placement of a pressurized cockpit within the ramjet spike diffuser and the forward section of the fuselage was arranged as a breakaway capsule for emergency escape at high speeds (the design maximum being 1,165 mph at 50,000 ft.) A parachute was designed to lower the capsule to a safe altitude for bailout.

The power plant, fueled with gasoline and liquid oxygen, would have combined four exterior rocket motors (4,000 lbs. thrust each) and a ramjet fed through 16 injector rings, coupled with 16 "peanut rockets" (50 lbs. thrust each) to serve as igniters and provide additional thrust. An Offenhauser engine, modified to take combustion air from the Lox supply, was developed as a 120 hp auxiliary unit to drive generator and fuel pumps.

Because of wide disparity between takeoff and landing weights, (due to large fuel consumption), a takeoff cart was designed. It would brake itself to a stop after the plane became airborne. Light tricycle gear was designed for landing only.

FORMER NORTHROP STUDENTS CALLED TO ALUMNI PICNIC

General Dynamics employees who are former students of the Northrop Institute of Technology are being sought for an Alumni Association picnic Sept. 24 at Felicita Park, Escondido.

Prof. J. R. Evans, national executive secretary of the group, will speak.

Of some 80 members of San Diego area group, more than 80 per cent are employed by General Dynamics/Convair and Astronautics.

Picnic time, with each family bringing its own lunch, is 11 a.m. Information is available through Ralph A. Sheheen, ext. 2491, or Robert Briggs, ext. 2886, both of Astronautics.



SUGGESTION PARLEY—Representatives of three General Dynamics divisions were present Aug. 28 at Pomona for conference on common problems relating to Employee Suggestion and Cost Improvement Proposal plans. Around table, from left: F. J. Fuller and R. W. Anke of GD/Pomona, M. J. Scott of GD/Fort Worth, and A. R. Mosco of GD/Astronautics. Not shown: J. M. Langendoen of Pomona.



ALL STARS—Four General Dynamics sons figured on one of San Diego's top Little Leagues, coached by Mickey McDonald of Astro (far right); managed by Al Daniels, GD/Convair (far left). Sons are: bottom row, Michael Byerogo, second from left; Pat Carrieres, fourth; Wayne Bradley, fifth; top row, Pat McDonald, far right.

Coaches From GD/Astro and GD/Convair Lead Little Leaguers to District Title

A Rainbow Little League "All Star" team studded with young ball players from General Dynamics families fought its way far into championship competition. The team, comprised of top players from the League's Kearny Mesa territory, was coached by Mickey McDonald, GD/Astro Dept. 603, and managed by Alfred Daniels, GD/Convair Dept. 142. The young athletes won the area and district crowns, and the first game in sectional competition. They were stymied on what could well have been a trip to the Little League "World Series" at Williamsport, Pa., only when they

yielded a second-round sectional game to the La Mesa "All Stars." General Dynamics sons on the team were Michael Byerogo, son of Robert, GD/Astro Dept. 280-6; Pat Carrieres, son of Al, GD/Convair Dept. 146; Wayne Bradley, son of Guy R., retired from GD/Convair Dept. 14-9, and Pat McDonald, son of the team's coach. President of Rainbow Little League is Stanley Cain, a GD/Convair inspector at Plant 2.

Tickets Limited For Fall Fashion Show At College Grove

A limited number of tickets to the only fashion show sponsored by GD/Convair this fall are now being sold at employee services outlets. Since the "Winter Wonderland" show set for Oct. 18 is being given under auspices of all members of San Diego Industrial Recreation Council, only 200 seats are set aside for GD/Convair, said Martha Woodberry, CRA commissioner of women's activities. Mrs. Woodberry is chairman of arrangements for the fall show. Convair will have one model out of the 15 who will show fashions from Walker-Scott Co. The show, open to both men and women, will be held in the Walker-Scott Co.'s Grove Room, College Grove Center, at 8 p.m. on the Wednesday night date. Door prizes and refreshments will be part of the program. Price of tickets is \$1.25 each.

Club Planning 'Bowery Ball'

Bangles and beads will set the mode for the coming annual fall dance sponsored by General Dynamics/Convair Management Club the end of this month (Sept. 30) in Balboa Park Club. A special prize will go to the person appearing at the "Bowery Ball" in the most authentic costume of the 1920s, announced M. C. Tomblor, committee chairman. A reserved parking spot will reward all who drive a 1931, or older, model car to the dance. Reservations for the special parking may be made through J. R. Colvin, co-chairman, ext. 1831, Plant 1. Lots of fun, harking back to the Roaring Twenties, is promised by committee members, all of the sponsoring engineering department. Tickets at \$2 a couple are in hands of usual ticket salesmen with all eligible Management Club members and guests urged to get theirs as soon as possible.

Rifles to Be Sighted At Valley Gun Club

Convair people getting set for the deer hunting season, which opens Sept. 23, may sight their large-bore rifles at the Valley Gun Club, Sept. 17, 1 p.m. Instructors will be on hand at the gun club location, adjacent to Gillespie Field range, said Jack Swank, CRA commissioner.

Rose Canyon Wins Softball Plant Play-off

Runs scored on singles won the shop softball title for Rose Canyon at the Aug. 25 play-off when it defeated Dept. 137, 2-1. Wayne Johansen and Jerry Zatarain scored the two runs that downed the runner-up club in departmental play. They both got to first on base hits with Zatarain pushed in by a single hit by Ray Perez. Dept. 137's single score was made on a home run right down the middle between left field and center out of the park. Winning pitcher who stuck through the entire seven innings was Manuel Chavez. Rose Canyon, second-round winner of Convair shop softball, won first of the two-out-of-three series, 4-0, from Dept. 137, first-round champ. Managers of the teams were Gil Chavez for Rose Canyon and Carl Price for Dept. 137.

Toastmasters Set Election

Convair Toastmasters #457 will elect a new slate of officers at their next Monday (Sept. 18) dinner meeting in the Convair cafeteria executive dining room. Andrew Gormish and Keith Blair, as nominating committee, will present nominees for club posts. Tom East (Dept. 6) will be toastmaster during the evening's program centered around the main theme, "Education." At the next regular session Sept. 25 Bill Duerksen will assume toastmaster duties with speeches to deal with the military situation, domestic and foreign. Convair Toastmasters and their guests will be attending the Area 5 award banquet Sept. 30 at Mission Valley Inn. Best club in the area will be named at that time by Gormish, Area 5 governor. Reservations are to be made through Gormish, ext. 2272, Plant 1. Dinner is \$3.25 each. A cocktail hour will precede the 8 o'clock banquet and program.

GD/CONVAIR BOY, 14, NOW GLIDER PILOT

A General Dynamics/Convair son may be the youngest glider pilot in the nation after soloing on his 14th birthday. Daniel Stark was checked out by his father, Carl F. Stark, manufacturing development engineer in Dept. 190, Aug. 26. Stark, San Diego Glider Club instructor, now has taught all three of his children to operate gliders. Daniel follows in the footsteps of his sister, Robin Lee, who flew her first solo glider flight last year on her 14th birthday, legal age limit for glider pilots. An elder brother, Allen, also taught by his father, is believed to be the youngest commercial instructor in the country. Both Stark and Allen teach at Torrey Pines Gliderport. Allen enters San Diego State College as a freshman this fall while Daniel is a freshman at Granger Junior High. Robin is a sophomore at Sweetwater Union High School.

'Space Science' Class Will Begin Monday

Two series of courses of special interest to General Dynamics engineers and scientists in the San Diego area are offered for the fall semester of University of California Extension. Lectures in "Space Science" will open next Monday (Sept. 18) with sessions each Monday for sixteen weeks in Navy Electronics Laboratory auditorium from 7 to 9 p.m. "Plasma Physics in Theory and Application" will be taught in San Diego on Thursdays beginning Sept. 28 at the same location and times.

600 Keglers Will Start Winter League Rolling

At least 600 GD/Convair keglers will be swinging into action this week as CRA winter leagues get under way at seven San Diego alleys. Two leagues bowling Thursday evenings at Victory Lanes and Frontier Lanes began competition last week, said Jim Hayman, CRA commissioner. The remaining

Dick Tobias' 78 Tops Linksmen

A 78 by Dick Tobias was low gross score in Convair Golf Club's sweepstakes at El Camino Aug. 26-27. Trailing him in the 0-13 handicap class were Bill Kennedy with 81 and Al Bezverkov with 82. C. B. Bagaloff and Dick Reid tallied 68s for low net, followed by Ed Vidovich and Gene Velasquez with 71s and Ned Tamm with 72. In the 14-21 handicap bracket, Bill Moon scored low gross with 86, while Jud Kenney's 88 placed second and Jim Thelen and Charles Hopkins tied for third with 90s. Low net scorers were Hal Driscoll with 70, Bert Emerson and Owen Hasbrooke with 72s and J. Jodka with 74.

Dick Torrance held a 10-point lead among 22-36 handicap golfers, his 85 leading Frank Rodgers' 95 for low gross. Lee Woll followed with 97. A score of 69 by T. Solberg won low net, while Bill Pierce and Bob Buchholz shot 72s, and Toby Hunley and Jim Duffy tied at 74. No sweepstakes are scheduled during September due to the GD/Astro ARA plant golf championships being held during the month at Fletcher Hills and Bonita, and GD/Convair championships at Circle R.

High Fidelity Show Sept. 14

General Dynamics/Convair people will have a chance to see close-up latest models of Stromberg-Carlson stereophonic high fidelity equipment tomorrow (Sept. 14) in the Plant 1 cafeteria. They will be on display from 3:30 to 5:30 p.m. Representatives from Thearle Music Co. will demonstrate the models during the afternoon, arranged as a part of the Stromberg-Carlson "Summer Stereo Festival." Anyone who purchases Stromberg-Carlson equipment with an employee purchase certificate during this month may buy a Stromberg-Carlson five-record album at a greatly reduced price. The album, "Broadway Stereo Festival," valued at over \$30, will go to employees for \$7.95. Authorized dealers in the San Diego area for Stromberg-Carlson are Thearle's, 640 Broadway; Southern California Music Co., 630 C St. and Mission Valley Center; Walker-Scott Co., 5th and Broadway and College Grove; and May Co., Mission Valley.

eight day-shift leagues and three leagues for swing-shifters start rolling this week. Already signed for spots in the 10 day-shift leagues, which bowl at 6:30 p.m., are 500; with about 100 forming the swing-shift leagues directed by Mike Brooks, co-commissioner. Bowlers who have not yet registered may still call either Hayman, ext. 1155, for first-shift places, or Brooks, HO-9-8793, for swing-shift. Although leagues now are filled, extra bowlers are needed to substitute during absences of regular bowlers during the season, said Hayman.

Heller Elected SPA President

W. B. Heller of General Dynamics/Convair systems and procedures (Dept. 8-4) assumed duties as president of San Diego Chapter of Systems and Procedures Association at first meeting of the 1960-61 year last night (Sept. 12). Other General Dynamics men serving as officers during the current year are J. J. Ireland, GD/Convair Dept. 8 supervisor, vice president; and Ward Soule of GD/Astronautics systems and procedures, secretary. Heading committees are five GD/Astro men: James W. Burns, B. S. Gamson, R. M. Hanna, J. A. Moore, and P. D. Neiswender. Anyone interested in attending meetings, either as visitors or as members, may obtain information from any of the General Dynamics personnel, said Heller, who may be reached at ext. 2241, Plant 1.

DISCOUNT OFFERED ON FISHING TRIP

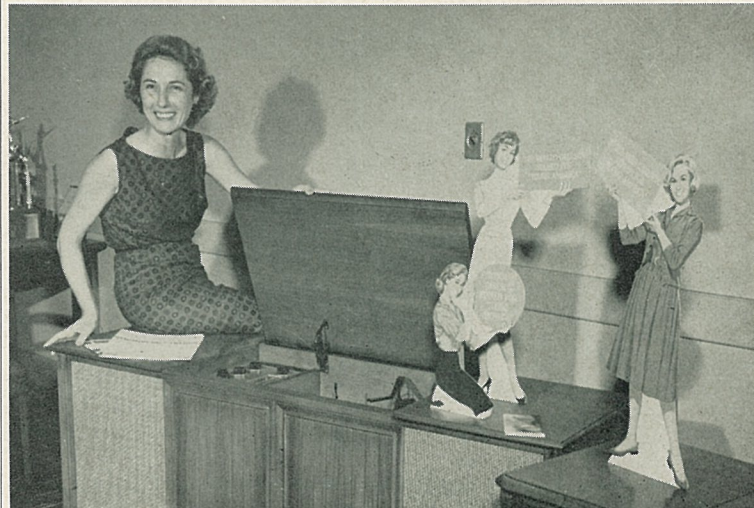
Convair anglers will have to go fishing this month if they want to take advantage of the special discount offered by Seaforth Landing. The dollar reduction in price for half-day trips on Seaforth Landing sportfishing boats expires Sept. 30. Exchange tickets are still on hand at GD/Convair employee services for the rest of the month.

GD/CONVAIR PIANIST TO TEACH ADULTS

Enrique A. Rivera (GD/Convair Dept. 400) will teach adult piano classes for the eighth year with the opening of the fall school term. Classes for beginning, intermediate, and advanced will be given Tuesday evenings at Crawford Adult High School; Thursdays at Northwest Adult High School; and Fridays at Hoover Adult High School.

Entries Start Today For CRA Golf Meet

Entries open today (Sept. 13) for the coming CRA golf tourney set for next month at El Camino course. Tournament dates are Oct. 7-8. Convair golfers may call ext. 1705, Plant 1, for tee-off times, said Ken Wulfemeyer, commissioner. Registration closes Sept. 29.



NEW MODELS—Evelyn Thrall of GD/Convair employee services shows new type Stromberg-Carlson stereophonic consoles going on display tomorrow (Sept. 14) in Plant 1 cafeteria, 3:30-5:30 p.m.

CRA Calendar

(Convair Recreation Association has some 40 activities in operation. For information on Convair sports, call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

AEROMODELERS — Reorganizational meeting to be held this month. For date and location call D. T. Larsen, ext. 2289, Plant 1.

ASTRONOMY — Public star party, astronomy exhibit, SD State College, Sept. 16, 7 p.m. to midnight.

BOWLING — Winter leagues start rolling this week. For information call Jim Hayman, ext. 1155, Plant 1; swing-shift bowling, Mike Brooks after 9 a.m. at HO-9-8793.

BRIDGE CLUB — Weekly sessions each Tuesday, 7:30 p.m., Barcelona Hotel, 326 Juniper St.

CAMERA CLUB — Model shoot Sept. 25, 7:30 p.m., Photo Arts Bldg., Balboa Park. Visitors welcome.

DELTA DIVERS — Meeting Sept. 19, 7:30 p.m., Convair cafeteria executive dining room, Pacific Hwy.

FISHING CLUB — Meeting Sept. 19, 7:30 p.m., Gillespie Field Clubhouse.

GOLF — Entries open today (Sept. 13) for Oct. 7-8 CRA tourney, El Camino course. Call ext. 1705, Plant 1. CRA plant championships continue Sept. 16-23 at Circle R.

ICE SKATING — Weekly ice skating sessions each Thursday resume Sept. 21 at Iceland, 6055 Lake Murray Blvd., La Mesa, 6:30-8 p.m.

JUDO — Instruction each Thursday, 7 p.m., CRA Clubhouse on Pacific Hwy.

MODEL RAILROAD — Meetings each Friday, 7:30 p.m., House of Charm, Balboa Park.

MOVIES — Reduced price movies each Friday, Saturday, Sunday at Adams Theater, 3325 Adams Ave. Admission: adults, 50¢; children under 12 free if accompanied by adult.

PISTOL CLUB — Next shoot Sept. 24, 9 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB — Meeting tonight, Sept. 13, 8 p.m., Harbor Drive headquarters.

ROAD RUNNERS — Third annual Travel Trailer Clubs of America Border District Rally at Del Mar fairgrounds, Sept. 28-Oct. 1.

ROCKHOUNDS — Meeting Sept. 14, 7:30 p.m., Gillespie Field Clubhouse.

ROLLER SKATING — Convair skate night Sept. 18 at Skateland, Front and G Sts. Free tickets at employee services.

SQUARE DANCING — Beginners' classes start Sept. 14, American Legion Hall, 4061 Fairmount Ave., 8 p.m.

TENNIS — Entries taken to Sept. 18 for Industrial Championships, Sept. 23, 24, 30, Oct. 1, Morley Field courts. Call Pete Beyrer, ext. 1245, Plant 1.

WATER SKI CLUB — Saturday skiing Sept. 16 and 23, 6:30-11 a.m., Santa Clara Point; 11 a.m. to 1 p.m., Tierra del Fuego. Sundays, Sept. 17 and 24, off east shore of Crown Point, Mission Bay, 9 a.m.-1 p.m.

WOMEN'S ACTIVITIES — Registration closes Sept. 18 for beginning charm school starting Sept. 20. Tickets on sale to fall fashion show, Oct. 18, at employee services. Call ext. 1245, Plant 1.

Convair Fishing Club To Plan Award Night

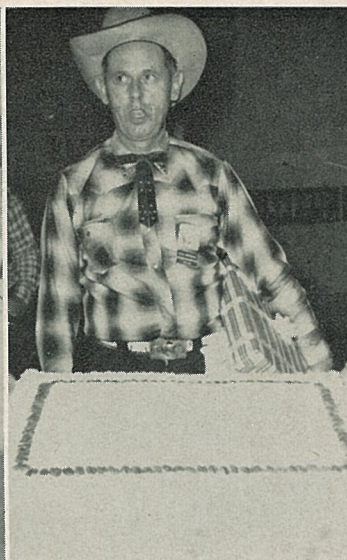
Convair Fishing Club members will meet next Tuesday (Sept. 19) at 7:30 p.m. in the Gillespie Field Clubhouse, near El Cajon, reminded Bob Menzie, CRA commissioner.

Plans will be made at that time for the annual trophy awards presentation set for after the first of the year.

Also, Convair fishermen wishing information on good angling spots and equipment for hooking the big ones are invited to attend the club meetings.



HAPPY BIRTHDAY—Convair square dancers whirl at celebration of birthday of their caller, Don Browne (center), whose birthdate fell on monthly "birthday night" party Aug. 8. In shot at left,



Convair club members, from left, Walter Church, Louise Fandel and Muriel Oswald, line up with callers from other clubs invited for occasion. New classes for beginning dancers start tomorrow.

Reservations, Fees Required in Advance For SD Charm School

All Convair women intending to attend the coming charm school must have their reservations and fees into GD/Convair employee services by Monday (Sept. 18).

Enrollment to the beginning charm classes will close that day, said Martha Woodberry, commissioner of women's activities at GD/Convair.

The CRA-sponsored series is open to all Convair ladies, including wives and teen-age daughters over 14, at \$9 per person for the complete course.

First session will be next Wednesday (Sept. 20). Classes will continue weekly for six weeks from 7-9 p.m. in the Convair cafeteria executive dining room, Pacific Hwy. Instructor is Mrs. Edith Antelline, San Diego charm school director.

Applications are now being taken at employee services, both plants; and at Rose Canyon in the office of Virginia Cannon, ext. 2125.

SKIERS WILL SHIFT OPERATIONS BASE

Water skiers at GD/Convair will try out a new Mission Bay skiing location during the next two Sundays.

They will move over to waters off the east shore of Crown Point on Sept. 17 and 24 on a trial basis, said Gene Sevigny, CRA commissioner. Boats will be on hand from 9 a.m. to 1 p.m.

Schedule for the next two Saturdays, Sept. 16 and 23, will find skiers at Santa Clara Point from 6:30 to 11 a.m. and from then until 1 p.m. at Tierra del Fuego.

The CRA water ski group now numbers 26 families, said Sevigny. Half a dozen new memberships were issued during the summer season. Regular weekend events will be planned at least through the month of September.

Rockhounds to Plan Coming Activities

Coming activities for CRA Rockhounds will be announced at tomorrow's meeting (Sept. 14) at Gillespie Field Clubhouse, 7:30 p.m.

Plans for events for the remaining months of this year were made at last week's board of control meeting, said Dan Whorton, commissioner.

A Convair club display and exhibits of individual members were entered in the Rockhound Gem-boree at Balboa Park last weekend.

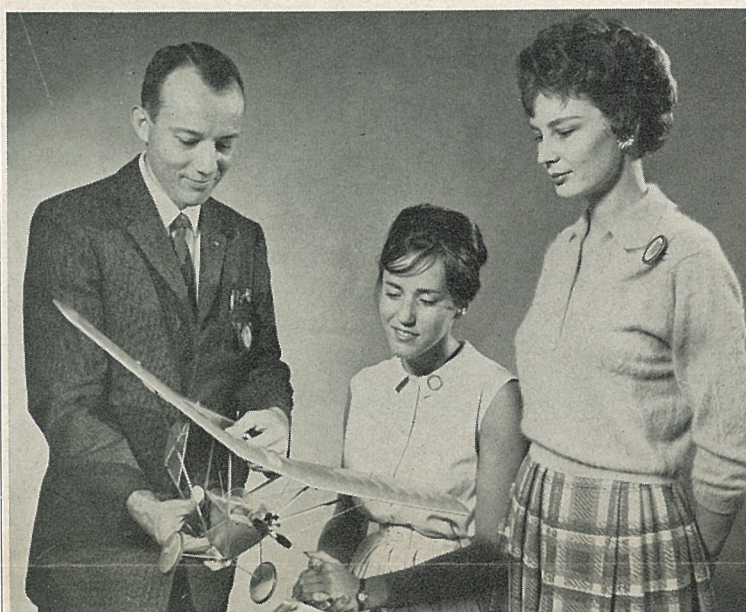
Radio Club Changes Night For Meeting

Convair Radio Club members will meet tonight (Sept. 13) instead of the usual Thursday date for this week only.

The meeting night has been changed to avoid conflict with the Ringling Bros. and Barnum & Bailey circus night for Convair families tomorrow, said Jim Lack, CRA commissioner.

Meeting time will be 8 p.m. in the club's Harbor Drive headquarters.

Sports & Recreation



NEAT MODEL—Don Larsen (Dept. 15), president of reactivated Convair modelers group, explains fine points of 1924 light plane model, dubbed "bath tub" from shape of cockpit, to Virginia Pfeleger (Dept. 14) and Maritta Dupuis (Dept. 10). Model, built by Walt Mooney (Dept. 6), is from design of the late Etienne Dormoy, long-time Convair engineer.

Aeromodelers to Reorganize After Summertime 'Vacation'

Reorganization meeting for Convair Aeromodelers is slated for this month to put the CRA group back into action after a lapse of several months.

CRA Commissioner Ted Sanford said that all former members and modelers who have indicated interest in scheduled events will be notified of date and location.

A program of meetings, on a twice-a-month basis, will be worked out. Contests, both indoor family-type and competitive flying events, are planned, said D. T. Larsen, president of the group.

A secretary will be named at the first meeting. Acting as counselors during reactivation of the club are veteran modelers, Walt Mooney and Nat Antonioli. Either

can be reached at ext. 2311 for Mooney, and ext. 2673 for Antonioli, for information.

Larsen will be meeting with presidents of Astro Modelers and San Diego Orbiters to lay the ground rules for the Tri-Club Contest, first to be sponsored by the Convair club. Thirty-five contestants are expected to pit their models in keen competition at the Oct. 22 meet set for the Clairemont Mesa Drive flying site.

Follow-on contests will see a November turkey shoot, a semi-annual meet in December, and scale free flight meet in February.

Anyone interested is urged to call CRA headquarters, ext. 1245, Plant 1, or Larsen, ext. 2289.

Ice Skating Activities Will Resume Sept. 21

Weekly ice skating activities for General Dynamics employees at Convair and Astronautics will resume at Iceland, 6055 Lake Murray Blvd., La Mesa, Sept. 21.

Skating sessions from 6:30 to 8 p.m. each Thursday are sponsored jointly by ARA and CRA with special admission rates of 75 cents for adults, 50 cents for youngsters under 16 years old, and 25 cents for spectators. Skate rental is 35 cents.

At 8 p.m. the rink is opened for public skating, but General Dynamics skaters may remain on the ice until closing at 10 p.m. with no additional charge.

Each week free classes will be

conducted by qualified professional instructors for advanced, intermediate and beginners.

A GD/Convair or GD/Astro identification card will be satisfactory for admission at the Sept. 21 session. At that time, participants will be asked to complete applications for new ARA/CRA Ice Skating Club membership cards which will be required at future sessions. There is no charge for membership.

Additional information on the club is available from Martha Woodberry, CRA commissioner, GD/Convair ext. 1245; or Bud Davies, ARA commissioner, GD/Astro ext. 3441.

Entries Close On Monday For Net Tourney

Convair tennis players may compete in the 1961 Industrial Tennis Championships if they enter by next Monday (Sept. 18) at the CRA office, Plant 1.

Entry forms may be obtained from Pete Beyrer, ext. 1245, Plant 1. CRA will pay half of the entry fees for Convair players. That would reduce fees for singles to \$1.50; doubles to \$2 per team.

Tourney dates are Sept. 23, 24, 30 and Oct. 1 at Balboa Park's Morley Field. It is being sponsored by the Industrial Recreation Council in cooperation with San Diego Park and Recreation Dept.

Trophies will go to winners and runners-up in singles and doubles and to winner of consolation singles flight.

Doubles partners must be from the same organization. No "and-partner" entries will be accepted.

Further details may be had by calling Beyrer.

BROADWAY TAKES .22 MASTER CLASS

B. L. Broadway (Dept. 115) was back on top again at GD/Convair Pistol Club matches, winning the master class of .22-caliber Police Course with a 291 at the Aug. 27 competition.

Carl Hornburg (Dept. 139) swept the center-fire Short National with 261. His nearest competitors had 247s. E. E. Bicker of Dept. 215 nabbed second spot over Ralph Picard (GD/E-Dept. 6) with his bull's-eye record.

Hornburg also took second in the master class, trailing Broadway by two points.

One-two in the expert went to W. G. Walker (Dept. 6), 289, and Bill Dittmann (Dept. 6), 280. Top sharpshooter was Bill Ginsky (Dept. 6) with 261 points; second, Arley Utter (Dept. 128), 240. R. G. Lair (Dept. 401) won marksman event with 241.

Mgt. Club Bowlers Rolling at Bowlero

Bowlers of the 16-team General Dynamics/Convair Management Club league went into action this week at Mission Valley Bowlero.

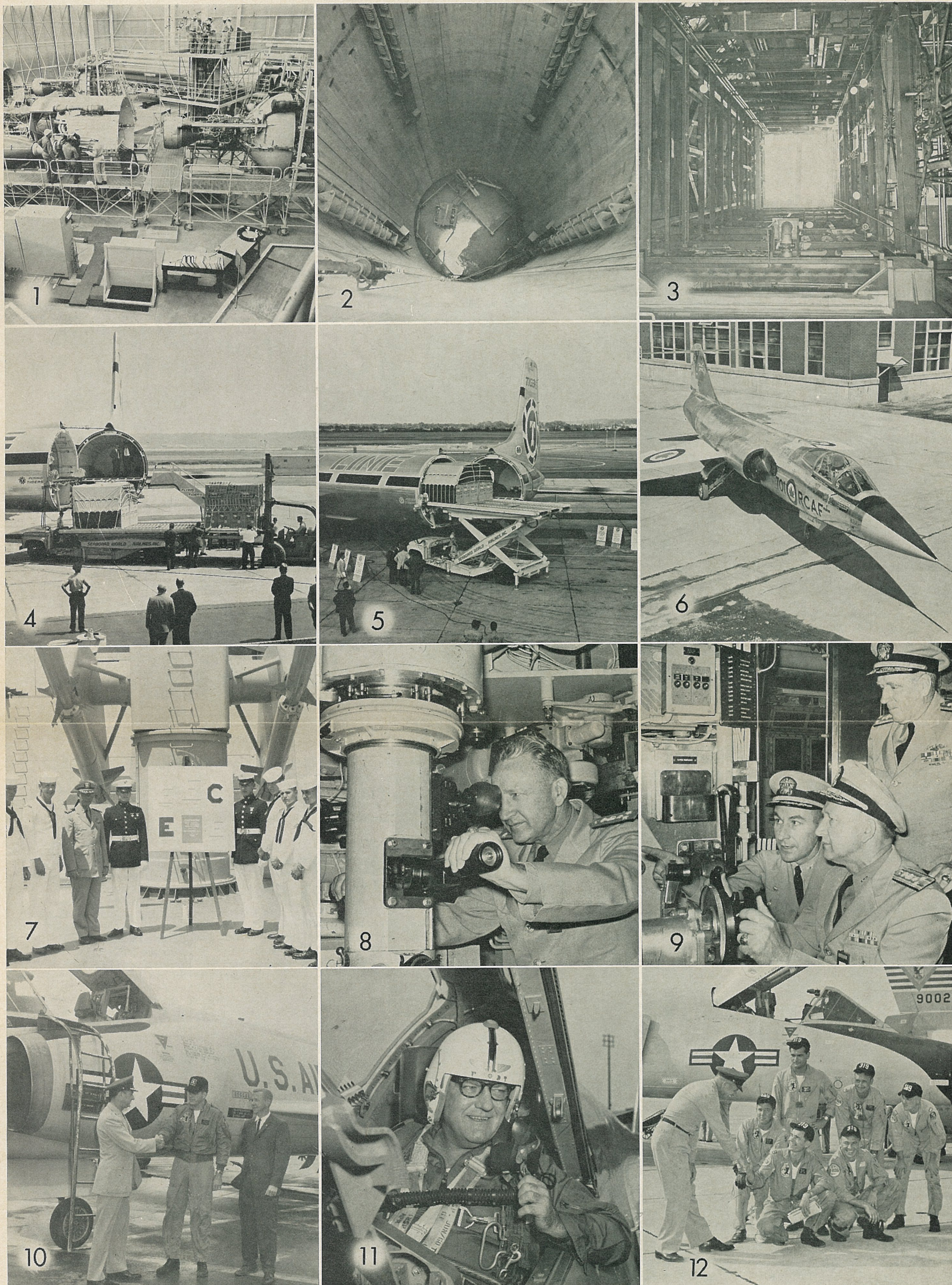
The 800-handicap teams will be rolling each Monday evening at 6:30 p.m. during the winter keg season. Any Management Club member who still wishes a spot on a team may contact Harry Lund at ext. 1225, Plant 1.

League officers chosen at an organization meeting last week are J. B. Hurt, president; E. V. Laird, vice president; M. C. Hangen, secretary-treasurer. T. H. Chadwick is Management Club bowling committee chairman.

80 Golfers Tee Off For Annual Tourney

Eighty Convair linksmen played first rounds of the annual plant golf championships last Saturday at Circle R.

The tourney will continue over the next two weeks, said Ken Wulfemeyer, CRA commissioner. Play is set for Sept. 16 and 23.



NEWS REEL — Photos from far afield highlight General Dynamics products. (1) Few students have more impressive classroom than those training for Atlas missile squadrons at Sheppard AFB, Tex. Air Force personnel are in actual study session, using GD/Astronautics-built trainers. (2) From Lincoln AFB comes this view of Atlas silo construction, looking down, showing massive shock springs which guard "insides" against earth movement. In (3), looking from bottom up, steel cradle is in place, ready for installation and checkout of Atlas missile. (4) Canadair Limited's spectacular "Forty Four" cargo plane, featuring swing-tail loading, prepares to absorb two pallets of freight (8,000 lbs. each) and in (5) task is almost completed. (6) Photo of Canadair CF-104. "Forty Four" is capable of carrying two 104 fuselages, with engines, plus wings and tails, etc. (7) Terrier missiles (built by GD/Pomona) shared in honors when USS Providence earned awards of "Es" in missilery, gunnery, engineering and battle efficiency, and "C" for communication excellence. Crew members pose with Capt. Russell Kefauver under Terrier launcher. (8) Vice

Adm. Claude V. Ricketts, new Vice Chief of Naval Operations, mans periscope of Polaris submarine Ethan Allen during tour of General Dynamics shipyard at Groton, Conn. (9) Here he is at controls with Capt. Paul L. Lacy and Vice Adm. Elton W. Grenfell, Commander, Submarine Force, Atlantic Fleet. (10) Lt. Col. Frank R. Jones, 59th FIS commander, Goose Bay, Labrador, congratulates 1st Lt. Gerald S. Miller after 1,000 flying hours in GD/Convair-built F-102. At right is GD/Convair field service rep, J. A. Myrann. (11) Allen I. McCone, Special Assistant for Installations to Secretary of Air Force, says "wonderful ride" after Mach 2 hop in GD/Convair-built F-106B at McGuire AFB, N. J. (12) Maj. Keith Cookus, left, praises F-106 pilots of 319th FIS, Bunker Hill AFB, Peru, Ind., for high marks in weapons deployment at Tyndall AFB, Fla. Pilots, from left: Capt. C. C. Gaylord, W. C. Gatschet, F. E. Hanson; (in rear) G. T. Beckman, J. W. Rodgers, 1st Lt. T. F. Pope. Lt. Col. W. O. Beane commands 319th; Ray Schaper is GD/Convair rep. Eleven F-102 and F-106 squadrons will vie in William Tell Weapons Meet at Tyndall next month.

Super Careful Handling Of Materials Decreed

Extra careful handling of all materials going into Convair products was re-emphasized this week at General Dynamics/Convair in a special program to reduce scrap and damage to a bare minimum.

The program followed notification to supervision from R. A. Neale, manager of operations, calling for careful scrutiny of material handling practices throughout the division.

R. M. Hatcher, operations planning manager, appointed B. R. Hisaw, chief of transportation operations, to head a material handling group to check present practices and make regular inspections of all areas. A training program is being set up by edu-

cational services to provide specialized instruction for key individuals; and cost reduction section considered special emphasis for Employee Suggestions and Cost Improvement Proposals involving material handling.

All departments will be expected to cooperate in the campaign, Hisaw indicated, including manufacturing planning and methods, quality control, facilities engineering.

As an example of steps that will be taken wherever needed, Hisaw called attention to a new practice of lining parts-handling tubs with soft material—foam or rubberized horsehair matting—to avoid possible scratching. Other measures will be installed.



CAREFUL—Bill Fairchild, GD/Convair manufacturing control stock clerk, places 990 duct assemblies in padded tub.

FAA Team Goes Aboard 990 For Certification

Convair's 990 jetliner program made a giant step forward last week as Federal Aviation Agency flight officials stepped aboard to begin certification.

Heading toward first revenue ticket, allowing airlines to put the advanced jet transport into passenger service, first stages of FAA testing are now in their second week. Goal is to receive a provisional ticket by the middle of October and revenue ticket before the end of December.

Ship N5602, second 990, took off last Thursday afternoon on its first FAA certification flight carrying a crew of five General Dynamics/Convair and four FAA flight men. They were John Knebel, pilot; D. W. Anderson,

flight engineer; Harold Brown, instrumentation engineer; Warner Lowe, senior flight test engineer; Swen Ahlgren, flight test engineer, all of GD/Convair. Federal Aviation Agency flight officers were J. J. Francek, 990 project pilot; O. K. Stampley, senior flight test engineer; Collier Walker and James Jordan, both flight test engineers.

The plane, marked with the red of eventual American Airlines stripings, spent the first few days in airspeed system calibration and stall speed tests, flying from San Diego home base. It is now at Edwards AFB for performance tests.

Altogether, five 990s will be (Continued on Page 2)

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Wednesday, September 27, 1961

Field Predicts Fall Opening For Pine Crest

By the first snowfall, General Dynamics/Convair people will be traveling to their own mountain resort for winter fun.

Pine Crest, mountain acreage purchased early this year by Convair Recreation Association exclusively for GD/Convair families, will be open for picnicking and tobogganing (if there's snow!) this fall, said J. K. Field, chief of employee services.

Opening of the 80-acre tract, located some 50 miles east of San Diego, three miles south of Julian, pends completion of rest room facilities, explained Field. First concrete block rest room is now under construction near the picnic grounds.

Permits have been issued by both the state and county for sewage disposal system and the well water has received approval from the San Diego County Health Department. A pump house is being built and a 5,000-gallon tank for water storage already installed.

The resort will not be ready for camping until next year, said Field, but by the end of November, families may use the grounds for picnicking. Access roads are being graded to different sections of the park. Rough construction is finished in the picnic area with tables and fireplaces yet to be built.

A toboggan slide has been cleared and leveled. It's a straight shoot of at least 100 yards. Later a short ski run will be added.



MILESTONE—FAA and GD/Convair flight men pause beside No. 2 990 jetliner before climbing aboard for first certification flight. They are: Harold Brown, Swen Ahlgren, John Knebel, Convair pilot; Warner Lowe, O. K. Stampley, J. J. Francek, FAA pilot; Collier Walker, James Jordan, D. W. Anderson.

Prevention Week Seen As 'Fire Bug Field Day'

All General Dynamics/Convair people will have a chance to "turn in a fire alarm" at demonstrations within the plant observing Fire Prevention Week, Oct. 8-14.

Fire Chief D. D. Dimmitt said that alarm boxes and extinguishers used by the company will be demonstrated at two Plant 1 locations every day during the week. Members of the company's fire department will be spotted inside Gate 2 and on top of Overpass 1, lighting fires and putting them out.

Anyone passing between the hours of 6:30 and 8:30 a.m. and 3:30-4:30 p.m. during Fire Prevention Week can "turn in an alarm."

Types of extinguishers used at different locations within the plant will be demonstrated. Main types are those using soda and acid, foam, carbon dioxide, or dry chemical.

Company firemen will explain rescue equipment and approved mouth-to-mouth method of resuscitation.

In other events scheduled to emphasize importance of fire prevention a crash fire fighting and rescue demonstration will be held on Lindbergh Field Oct. 14. All city, industrial, and military fire departments will be invited.

"We are working closely with San Diego City and other fire departments in the area to make every person aware of his individual responsibility in preventing fires," said Chief Dimmitt. "Cause of most fires can be traced directly to carelessness or indifference."

"General Dynamics/Convair, although one of the largest industrial plants in Southern California, has one of the smallest (Continued on Page 2)

Salvage Yard Sked Established For Oct.

Salvage yard schedule for employee sales at General Dynamics/Convair and General Dynamics/Astronautics sites is:

GD/Convair—Sept. 30 and Oct. 14.

GD/Astro—Oct. 7 and 21.

Extra Hard Push Required to Meet CIP and ES Goals

Most of the 85 departments of General Dynamics/Convair must buckle down in the next couple of months if they expect to meet their CIP and ES goals by the end of the year.

Only nine direct and six indirect departments had met their target figures as of the end of August, C. Harold Hahn of cost reduction section reported.

Of the 15 which stood even with the board at that time, nine had bested their entire target amount for the year. Hundred per-centers were Depts. 14, 44, 46, 119, 129, 139, 140, 146, 148.

Others meeting goals were Depts. 3, 91, 93, 137, 142, 143.

"As a whole, GD/Convair lags far behind the cost savings expected so far from CIPs and ESs," said Hahn. "At the end of the first eight months we should be at the two-thirds point of the year's goal of \$2½ million."

"Actually, we are within only 40 per cent of it. Savings up to the first of September totaled only \$1 million. This leaves a huge amount—a million and a half—yet to be cut from expenses by CIPs and ESs before the end of the year!"

Hahn said that volume of cost cutting suggestions continues

high (and rate of approval was never higher) but total dollar value of ideas is not as great as in the past.

Eight Qualify Thus Far For Annual Award

Eight from General Dynamics/Convair, seven men and one woman, have saved the division a half million dollars so far this year to be in the running for the 1961 President's Award.

Eligible candidates by the first week of September and their individual savings through Cost Improvement Proposals were: W. J. Gibson (Dept. 140), \$115,722; W. R. Holmes (Dept. 6), \$60,033; Mattie C. Ross (Dept. 16), \$57,024; J. G. Sheldon (Dept. 14), \$42,500; S. L. Cushman (Dept. 146), \$38,189; J. A. Dematteis (Dept. 91), \$37,527; K. R. Meli (Dept. 190), \$33,871; L. F. Cesconini (Dept. 140), \$30,950.

The number of qualifying candidates for the division's top cost-reduction award is lower than usual at this time of the year, said C. Harold Hahn, assistant supervisor of cost reduction. "Normally we have at least a dozen eligible candidates by September," he continued, "So time is of the essence. There are nine men who have more than \$10,000 in savings to their credit and are within striking distance of being eligible."

If anyone needs any help in turning in proposals, Hahn urges them to call exts. 687 or 1111.

Rep. Wilson to Speak To Management Club

Congressman Bob Wilson will talk about "The Ways of Washington" before the Oct. 10 joint meeting of General Dynamics/Convair and National Steel Co. Management Clubs.

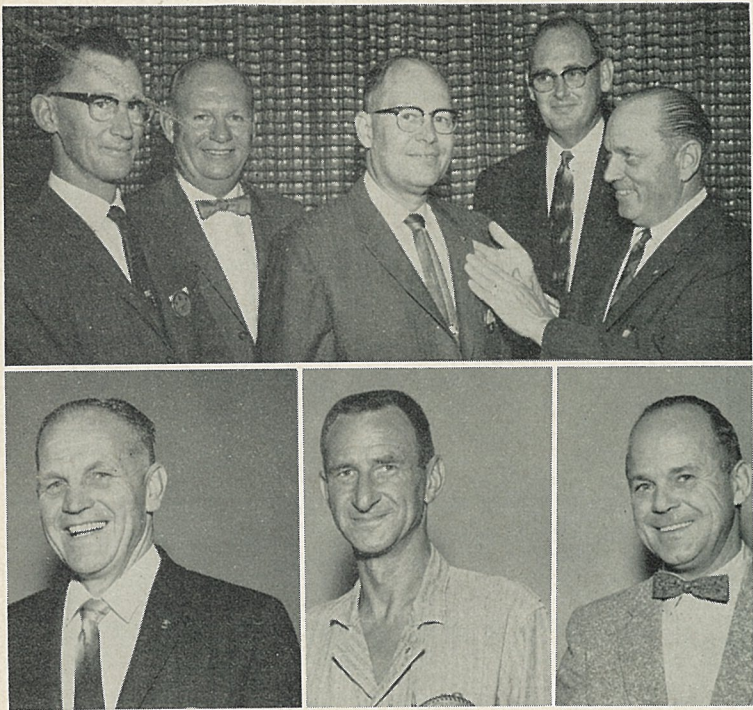
The 6 p.m. dinner meeting will be in the Caribbean Room of El Cortez Hotel. Tickets at \$2 each are available through usual sales outlets.

Diane Helman, San Diego vocalist, will sing.

Arrangements are being made by manufacturing control, sponsoring department. M. L. Sweeney is committee chairman.



FIRE QUENCHERS—Lt. F. W. Green kills flames of a gasoline fire with jet of carbon dioxide in GD/Convair fire department demonstration such as will be set up in Plant 1 week of Oct. 8-14. At far right is Chief D. D. Dimmitt; kneeling is H. W. Rae, fire marshal. Inside asbestos suit is C. H. Cordes.



MANY YEARS—C. R. Hamann, Dept. 91-0, (top photo) was recognized this month for his 35 years of Convair service. From left, T. P. Solberg, D. C. Burrows, Hamann, J. D. Milling, J. H. Famme, General Dynamics/Convair vice president and general manager. In lower row, left to right, are 25-year men, C. F. Uhl, Dept. 160; R. A. Schultz, Dept. 25-1; F. L. Kany, Dept. 400-1.

FAA Starts Certification

(Continued from Page 1)

used in the accelerated FAA certification program, No. 1 and No. 4 ships are neck-in-neck in their race to join No. 2. One or the other will be released by the first of the month for FAA flights. When No. 1 goes into the program it will shoulder responsibility for flutter, stability and control testing; No. 4 will share performance test tasks with No. 2.

Takeoff and landing work will be done at Edwards with two planes there the next couple of months. Takeoffs will check out the 990's high gross weight specifications of 247,000 lbs. At the desert base are about 20 engineering flight test personnel and an equal number of field operations men, three shifts, to support the first plane. At least another 10 field operations people will go to Edwards with the second craft to keep both 990s in top condition.

990s to Start Service in Feb.

Delivery of the first jet 990s to American Airlines is expected in December, with service starting in February.

American announced last week that the original contract ordering 25 jet 990s has been replaced by a new agreement providing for a reduced speed requirement (584 mph at 21,200 feet) and delivery of 15 aircraft by June. In addition, American has purchased five more on condition a speed of 620 mph at 21,200 feet at maximum thrust can be achieved.

Research is being conducted at Cornell University to determine what changes should be made in aerodynamic characteristics of engine nacelles in order to increase the plane's top cruising speed. The original 15 aircraft ultimately will be modified for an increased speed of at least 610 mph, American announced.

Research Engineer Off to Calif. U. For Scholarship Study

Thomas H. Cooke, research engineer at General Dynamics/Convair, entered University of California at Berkeley this fall to begin work toward his master's degree on a company scholarship.

Cooke was selected as one of four to receive \$1,000, in payments of \$100 a month, given annually by GD/Convair under its financial graduate assistance program, and administered by educational services.

Others went to Kenn E. Clark of Detroit, Mich., attending the University of Michigan for master's in aeronautical and astronautical engineering; Reiner Decher of Trumbull, Conn., entering Massachusetts Institute of Technology for master's in aerospace sciences; and William R. Seebaugh of Troy, N. Y., going to Princeton University for a master's in aeronautical engineering.

Cooke joined Convair over seven years ago as a junior engineering aide and for four years carried a full college load. He received his B. S. in mathematics from San Diego State College in February of last year. He plans to work toward a M. B. A. in business management.

He is now on leave from engineering's systems analysis group.

Retirements

CONVAIR

GRIEBNER—Carl A., Dept. 34-1. Seniority date Oct. 20, 1932, retirement effective Aug. 31, 1961.

MILICK—Anton L., Dept. 217. Seniority date June 4, 1956, retirement effective Sept. 15, 1961.

Save Material — Don't Throw Your Job Away!



FIRST—Mattie C. Ross (Dept. 16-9) receives first pendant ever given GD/Convair woman for CIP. R. I. Morse, office services manager, makes presentation with C. H. Hahn, cost reduction assistant supervisor, at left.

Mattie Ross' CIP Qualifies Her For First Gold Pendant at SD

Mattie C. Ross, who supervises General Dynamics/Convair telephone operations, is the first woman in the division to qualify for the President's Award in the five-year history of the award program.

Two Cost Improvement Proposals, approved this month, put her among the select group who so far this year have submitted ideas saving \$25,000 or more each.

Mrs. Ross' suggestions involved special telephone equipment installed at little cost to the company, which will save GD/Convair an estimated \$57,024 a year. In addition, the new installation provides faster, more efficient long distance operation, explained R. I. Morse, manager of office services.

Besides placing her in the running for the 1961 President's Award, her CIPs won her the first gold pendant given in the division. The pendant award is reserved for women turning in CIPs amounting to more than \$25,000.

Mrs. Ross, who joined Convair division in 1944 as a switchboard operator, now supervises a staff of 24. She directs telephone facilities comparable to those serving cities of about 15,000 population. Switchboards at Plants 1 and 2, and Rose Canyon handle in the neighborhood of 700 long distance calls each day (or some 15,000 a month) for all GD/Convair people and those of Astronautics and Electronics divisions located within the Plant 1 and 2 sites.

Con-Trib-Club Divides Uncommitted \$50,000

(Continued from Page 1)

Girls, \$2,000; Encinitas Youth Recreational Committee, Inc., \$500; Girls' Club of San Diego, \$1,500; Girls' Club of National City, \$750; Girls Scouts, San Diego Council, \$3,000; YMCA, San Diego, \$3,000; YWCA, El Cajon, \$500; YWCA, San Diego, \$500.

Other donations at the same meeting saw \$1,000 go to International Guiding Eyes, Inc.; \$500 to Big Brothers of San Diego County, Inc.; \$1,000 to Christian Business Men's Committee of San Diego; \$2,500 to San Diego County, Edgemore Geriatric Hospital; \$500 to Pathfinders of San Diego, Inc.; \$500 to Crossroads Foundation.

San Diego County Association for Mentally Retarded Children, East County Chapter, \$1,000; San Diego Children's Dental Health Center, \$1,500; H.E.A.R. Foundation, \$500; Sunnyside Guild, Inc., \$1,250; National Foundation, Rancho Los Amigos Hospital, \$2,500; San Diego County General Hospital, \$1,000; Sheltered Workshops of San Diego, Inc., \$1,000; John Tracy Clinic, \$250; United Cerebral Palsy Foundation, \$1,500; Neighborhood House, \$1,000;

San Diego County Epilepsy Society, Inc., \$1,000; Traveler's Aid Society of San Diego, \$500.

At the first September meeting \$10,000 was approved in contributions. They were Arthritis and Rheumatism Foundation, Southern California Chapter, \$1,000; San Diego Mental Health Association, \$1,000; San Dieguito Family Service Association, \$500; Foothills Family Service Association, \$1,000; San Diego County Multiple Sclerosis Society, \$1,000; Hillcrest Receiving Home, County of San Diego, \$1,000; San Diego Children's Home Association, Inc., \$1,000; Volunteers of America, \$1,000; City of Hope, \$500; National Cystic Fibrosis Research Foundation, \$1,000; Salvation Army, \$1,000.

Two Days Left Before 'Ball'

Only two days are left for Management Club members at General Dynamics/Convair to get their tickets to their annual fall dance this Saturday (Sept. 30).

And, they have only that much time to practice their Charleston and Black Bottom for the dance contests at the "Bowery Ball." Re-enacting days gone by, costumes of the Twenties will be in high style; silent movies will bring back shades of Valentino during intermission; tap beer, pretzels, and mix will be free.

J. R. Colvin, co-chairman of arrangements, is still taking reservations at ext. 1831 for anyone who will drive a 1931 or older car to the Balboa Park Club for the ball. He will save a special parking space for the old-timers—cars, that is.

Others on the committee are: M. C. Tomblar, chairman; R. L. Fefferman, beverage chairman; W. Marsh, decorations; F. Rolsten, publicity and promotion; K. Blair, raffle. Sponsoring the Management Club affair is engineering department.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due during the period Sept. 16 through Sept. 30:

Thirty-five-year: Dept. 91-0, C. R. Hamann.

Twenty-five-year: Dept. 6-04, W. B. Summers; Dept. 8-4, C. H. Hahn.

Twenty-year: Dept. 3, M. T. Davis, J. J. Gaskins, Martha B. Peterson; Dept. 14-7, John Comb; Dept. 16-2, M. F. Lewis; Dept. 25, W. E. Gille, E. E. Larsen, E. A. Norden; Dept. 31, T. O. Sather, W. A. Swanson; Dept. 34-2, C. Lee; Dept. 45-0, V. J. Shandera; Dept. 48, L. D. Fouch, C. L. Keech, L. L. Tremble; Dept. 97-7, Edna R. Wilson.

Dept. 101, R. L. Shinn; Dept. 120, G. W. Oliver; Dept. 138, Emil Hoffmann; Dept. 139, L. E. Roth; Dept. 140, M. C. Tracy; Dept. 142, F. A. Gordon Jr., E. E. Miller; Dept. 148-0, V. G. Minor; Dept. 171, M. J. Estes Jr.

Dept. 180, C. G. Earp; Dept. 188, B. E. Mundt, Edward White; Dept. 192, J. I. Luckett, Cleo W. Pharis, G. H. Woodberry; Dept. 223, M. C. Brackelsberg; Dept. 292-2, C. J. Rudeen; Dept. 401, Adrian Shuler, A. J. Signorelli.

Fifteen-year: Dept. 3-4, M. V. Clark; Dept. 31, H. D. Prince; Dept. 115, E. T. Johnson; Dept. 129, Nana H. Fuell; Dept. 133, F. J. Cyr; Dept. 138, J. A. Gagnon; Dept. 142, Annie D. Wilkins; Dept. 146, R. T. Miller, B. K. Shourds; Dept. 190-2, R. D. Bush; Dept. 292-1, J. G. Gonzalez.

Ten-year: Dept. 1-16, C. L. Spencer; Dept. 6, H. S. Arneson, V. J. Baros, E. W. Fowler Jr., E. S. Machacek, J. W. Mansfield; Dept. 8-4, P. R. Yates; Dept. 14-4, Adlena Williams; Dept. 21, L. E. Gunn, W. E. Phillips, C. W. Smith.

Dept. 25, R. H. Collamer, E. E. Cook, P. A. Farris, Jack Parish, C. E. Sorrell; Dept. 31, P. L. Shively; Dept. 34-5, E. H. Amory Jr.; Dept. 45-0, M. A. Boothby; Dept. 115, V. S. Wisniewski; Dept. 128, Mary N. Rodriguez; Dept. 141-1, R. E. Knauer.

Dept. 180-0, J. D. Bentz; Dept. 192-5, R. W. Landis; Dept. 197-5, G. E. Briggs; Dept. 215, Marge M. Edwards; Dept. 216, Lupe A. Romero; Dept. 280, Alfred Benavides Jr.; Dept. 400, C. D. Guest, Gretta E. Malfair, R. A. Porter, Victoria P. Powell; Dept. 401, Norma E. Cox, William Paishon Jr.; Juanita B. Simpson.

GD/ELECTRONICS

Ten-year: Dept. 6, E. V. Jespersion, Louis Paradise.

Births

CONVAIR

HALL—Daughter, Leir'dre, 6 lbs., 9 oz., born Sept. 12 to Mr. and Mrs. Wendell Hall, Dept. 16.

HARDY—Daughter, Margot Joanne, 7 lbs., 14 oz., born Aug. 29 to Mr. and Mrs. D. E. Hardy, Dept. 6.

PLUNKETT—Son, Charles Henry, 7 lbs., 13 oz., born Sept. 14 to Mr. and Mrs. B. G. Plunkett, Dept. 138.

POWELL—Son, Kenneth Richard, 8 lbs., 5 oz., born Aug. 21 to Mr. and Mrs. C. R. Powell, Dept. 48-11.

Lost & Found

CONVAIR

Reward offered for return of prescription ground tinted glasses, brown frames with silver trim, left in ladies restroom in Bldg. 33, Sept. 8, Dixie Holmes, Dept. 45-1, ext. 1447 or 443.

Promotions

CONVAIR

Promotions to or within supervision effective Sept. 11.

Dept. 44, Material Control: To material release supervisor, J. D. Barbieux, W. A. Moss, L. H. Thoulion. To inventory records supervisor, I. Markel.

Dept. 50: To senior project engineer, D. H. Bennett. To chief military programs engineer, L. E. Ottem. To chief technical engineer, F. A. Stephenson. To sr. technical group engineer-aerophysics, H. C. Matteson. To sr. technical group engineer-thermo, J. A. Brown. To chief administrative engineer, M. C. Curtis. To chief new products design engineer, H. P. Williams. To project engineer, B. B. Shaffer. To sr. electrical group engineer, R. Malm, E. Gauthier. To sr. product support group engineer, A. W. Kellogg.

Dept. 101, Sheet Metal: To assistant foreman, H. M. Woodard.

Dept. 192, Manufacturing Control: To M/C general foreman, R. L. Ingraham. To M/C foreman, J. R. Munson.

EDWARDS AFB

Dept. 318-0, Jet Transport Flight Test Operations: To guard lieutenant, C. E. Marquis.

GD/ADVANCED PRODUCTS

Dept. 986-1: To asst. manager/advanced products, M. J. Gallagher. To project engineer, M. T. Kam. To chief of mechanical R & D, J. A. Kline.

Personals

CONVAIR

The kind expressions of sympathy by Convair friends at the loss of my husband, Donnie Hamlin, are gratefully acknowledged and deeply appreciated.

Carolyn Hamlin.

I wish to express my sincere appreciation to all my friends in General Dynamics/Convair and General Dynamics/Electronics for the many kindnesses and sympathy received at the death of my wife, Edna.

W. A. Ross, GD/E, Dept. 6.

I wish to express my sincerest thanks to all my friends and co-workers in Depts. 140, 116, 133, 192 who were so generous and thoughtful during my time of sorrow at the death of my wife, Patricia Ann Jones. Your kindness is greatly appreciated.

Gary Jones, Dept. 192.

Words cannot express my gratitude for the many kindnesses and personal assistance given me by GD/Convair people in the illness of my mother and brother. I wish especially to thank Messrs. Bradley, Holland, Lovelady of Dept. 116 supervision, Molly Dowell and the Con-Trib-Club.

Stella Hahling, Dept. 116.

Deaths

CONVAIR

RUST—Maynard J., Dept. 99. Died Sept. 6. Survived by wife, Mae, son, daughter, four sisters, two brothers.

WIEBE—Abram H., Dept. 48. Died Sept. 10. Survived by wife, Ruby; two daughters, Mrs. Madeline Johnson, Sandra Wiebe; two sons, William A., Warren R. Wiebe.

General Dynamics NEWS

Successor to "Convairity" (which for 13 years served plants of the former Convair Division of General Dynamics Corporation), West Coast and Texas editions of the NEWS are published bi-weekly by General Dynamics with editorial headquarters at 1071, Logan Jenkins, editor-in-chief.

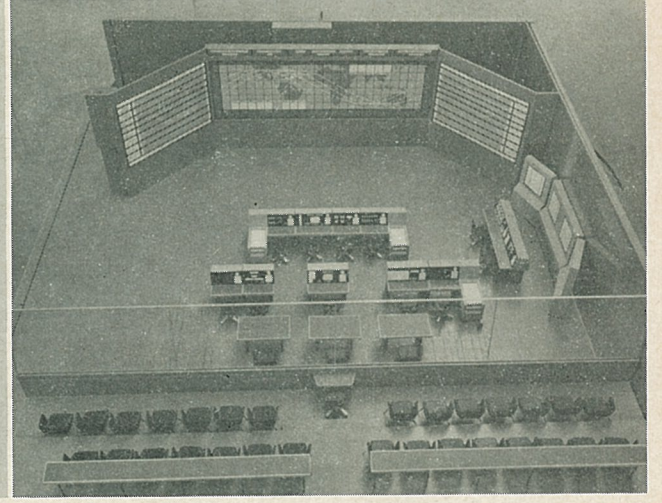
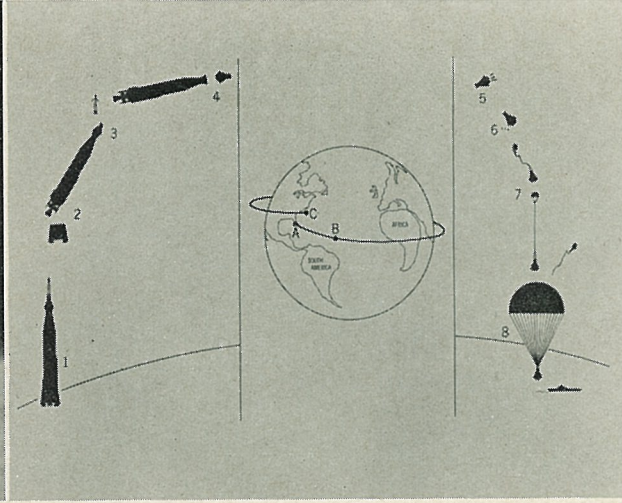
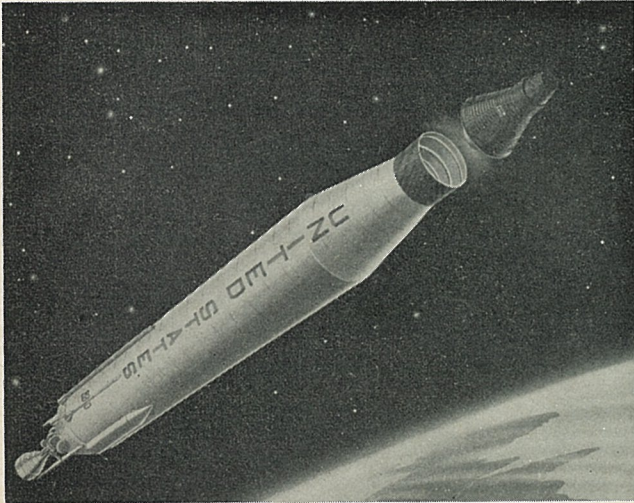
Approximate current total circulation, over 70,000.

Astronautics Editorial Offices, Bldg. 8, GD/Astronautics, Mail Zone 130-01, P.O. Box 1128, San Diego 12, Calif. Telephone BRowning 7-8900, ext. 3322. Staff: Bryan Weickersheimmer, news editor; Willard Harwood.

Convair Editorial Offices, Bldg. 32, Plant 1, GD/Convair, Mail Zone 1-320, P.O. Box 1950, San Diego 12, Calif. Telephone CYpress 6-6611, ext. 1071. Staff: Grayce Faith, Helen Pemberton.

Fort Worth Editorial Offices, Col. 72, Admin. Bldg., GD/Fort Worth, Mail Zone 0-50, P.O. Box 748, Fort Worth 1, Texas. Telephone PERshing 8-7311, ext. 2961. Staff: Dave Lewis, news editor; Louise Sutton, Mary Beck.

Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone National 9-5111, ext. 6226/5279. Staff: James Combs Jr., news editor; Carol Colbert. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.



ATLAS-LAUNCHED—In center above is flight path of successful Mercury shot Sept. 13 during which Atlas missile put capsule in orbit nearly 100 miles above earth. At left is artist's sketch at point of separation. At right is model of Project

Mercury Operations Control Center at Cape Canaveral, designed and built by GD/Electronics for operation. General Dynamics President Earl Johnson congratulated Astronautics on "this all important one."

GD/Astro Population Tops 30,000 Mark

General Dynamics/Astronautics employment this month (Sept. 12) climbed above the 30,000-person mark for the first time.

Total employment is up 5,890 over the first work day of 1961, reflecting an average weekly increase of more than 163 persons.

Off-site bases, including Sycamore Canyon, added 2,097 employees for a weekly average increase of 58 persons. Vandenberg AFB currently tops all with an employment of 1,520. Schilling AFB is now the largest operational base with 1,263 persons employed.

Approximately a third of Astro's total population is off-site.

GD/Convair Commended by AF As Palmdale Facility Closes

Seven years of operations at Palmdale, Calif., ended early this month for General Dynamics/Convair when facilities were turned over to North American Aviation. Built specifically for the F-102 and F-106 programs, the Palmdale facility tested and delivered to the Air Force more than 1,000 airplanes. Peak employment was 2,600, reached in September, 1957. The last F-106 was turned over to the AF this summer.

Lt. Col. Charles W. Atterholt, chief of the USAF San Diego Air Procurement District, informed J. H. Famme, vice president and general manager for GD/Convair, that transfer of the facility "culminated a clearance and vacating

operation which I consider most exemplary. Convair's performance was commendable both in timeliness of vacating the site and the quality of plant records transferred." Atterholt mentioned that North American officials had been particularly complimentary of F. J. Parker (who was in charge of the close down), commenting upon his cooperation and thoroughness.

North American is using the former Convair facility for B-70 work.

During GD/Convair operations in the Palmdale area, pilots logged more than 21,000 hours in more than 19,000 flights.

At the close down, Famme extended his appreciation to all personnel involved and specifically mentioned Parker and W. J. Martin (now in charge of quality control and production flight at San Diego), former base manager. Parker is now with GD/Astronautics as chief of stores and traffic.

Atlas Shot Praised By Earl Johnson

J. R. Dempsey, General Dynamics/Astronautics president, received the following wire from Earl D. Johnson, president of General Dynamics Corporation, following the successful Mercury capsule orbit Sept. 13:

"Congratulations to you and your people for doing so splendidly on this all important one."
Earl D. Johnson.



TURNOVER—F. J. Parker turns over keys to Palmdale, Calif., facility to Jerry Barton of North American as GD/Convair's tasks in Antelope Valley phased out. From left: Lt. Col. Charles W. Atterholt, Maj. B. A. Hurlbut, Barton, Wallace Fore of North American, W. J. Martin of GD/Convair, Parker.

'Pilot Ready Room' Placed in Operation To Serve San Diego Air Travelers

Completed and put into use this month was a new "Pilots' Ready Room" at San Diego to serve government and military personnel visiting General Dynamics divisions there.

The 25x40-ft. concrete block building is located at the north end of Lindbergh Field, adjacent to Plant 1 salvage yard. Access is from Lindbergh Field side only.

The new building replaces the former pilots' lounge on second floor of Bldg. 4, Plant 1. Now all government planes coming to San Diego are directed to taxi to stops in front of the new lounge, relieving congestion on the field.

The ready room, erected under supervision of GD/Convair plant engineering, contains one large room for lounge, conference room, office. In the other half are showers, locker room, and rest rooms.

It is open 24 hours a day every day in the week. During day hours on weekdays the office is manned by W. W. Lynt of GD/Convair communication department. He assists government and military personnel arriving for business at General Dynamics plants in the San Diego area. Transportation and hotel accommodations are arranged, if needed; airplane service, fuel and oil provided, and minor repairs, if possible.

The lounge is not restricted to

General Dynamics visitors. Building and services are open to personnel of all government planes landing at Lindbergh Field, if they wish to use it.

Arrivals and departures of military planes are charted on the operations board in Lynt's office. He is alerted to arrivals by Federal Aviation Agency officials.

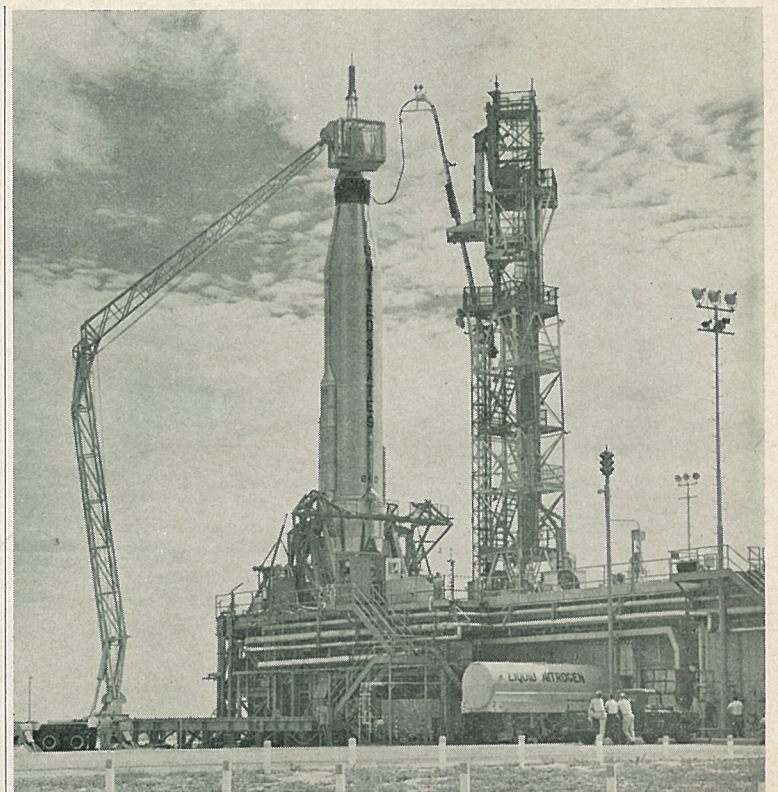
Much of the traffic at the site is due to daily airlifts of the Air Force Space Systems Division which connect San Diego with

Vandenberg, Norton, Edwards Air Force Bases and AFMTC in Florida.

ASA International Airlines flights #480 and #481 connecting San Diego with Los Angeles and Vandenberg AFB, departing at 7:15 a.m. and 3:15 p.m. daily, will continue to use the main Lindbergh Field terminal. General Dynamics people using the service are to check in at Swift Air Service office at the airport, as before.



BETWEEN FLIGHTS—Air Force officers from Colorado Springs relax at San Diego in new Pilots' Ready Room before departure. At counter, Cols. T. W. Bothwell and K. R. Kelsoe check with W. W. Lynt, in charge of lounge, and R. M. MacIver, General Dynamics manager of Colorado Springs office.



ON THE PAD—Atlas 88-D is shown on pad at Cape Canaveral prior to shot that put Mercury capsule in orbit. "Cherry picker" is being used for last minute capsule check.

Atlas Reaffirmed As No. 1 Launcher

Successful orbit of a Mercury spacecraft Sept. 13 was the fifth successful scientific space launch attributed to an Atlas launch vehicle so far this year.

One other scientific space launch was considered partially successful, while a single shot has been declared unsuccessful for the year.

Atlas 88-D blasted off from Cape Canaveral's Complex 14 at 7:04 a.m. (PDT) after a countdown conducted by General Dynamics/Astronautics crews headed by T. J. O'Malley, test conductor. Participating were representatives of the National Aeronautics and Space Administration (NASA), sponsor of the Mercury program.

Some three hours and 10 minutes later, after an earth-circling flight of one hour, 46 minutes, a U. S. Navy destroyer fished the Mercury capsule from the Atlantic some 161 miles east of Bermuda. Meanwhile, Atlas 88-D, minus the booster section, continued to spin in an earth orbit with an apogee of some 158 miles and a perigee of approximately 100 miles. How long the missile tank would remain in space was unknown, although the period was estimated as a brief one.

Many messages of congratulations flashed back and forth following the flight. J. R. Dempsey, GD/Astronautics president, said in a message to employees:

"This flight again reaffirms that our Atlas is the nation's number one space launch vehicle. Our records now stand at an enviable 12 successes out of 16 scientific space launches. Our overall Atlas record is an impressive 63 successes out of 96 launches with 21 partial successful and only 12 unsuccessful. With your fine work, I am confident our record will

continue to grow."

Of the 16 scientific space launches mentioned by Dempsey, seven have come thus far in 1961, including the Mercury shoot.

Starting the 1961 "parade" was a Jan. 31 launch of a Samos II spacecraft by Atlas 70-D from Vandenberg AFB's Point Arguello Complex which resulted in a near circular orbit (polar) of approximately 300 miles high.

A sub-orbit Mercury spacecraft launch followed Feb. 21. Atlas 67-D was launched from Complex 14 at Cape Canaveral. The spacecraft was recovered less than an hour later some 1,425 miles down range.

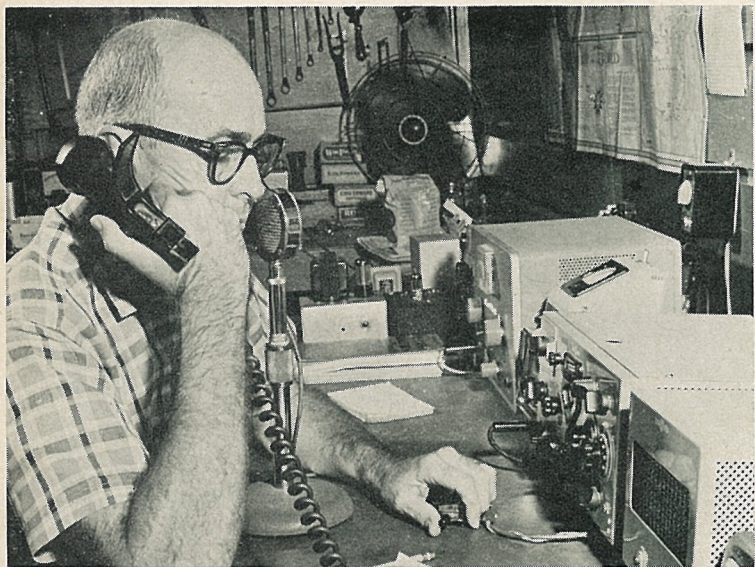
Considered partially successful was a March 25 launch of Atlas 100-D, carrying a Mercury spacecraft, from Cape Canaveral. However, an abort system to eject the spacecraft from the missile in emergencies, worked perfectly after the range safety officer destroyed the missile. As a result the Mercury spacecraft was recovered.

On July 12 Atlas 97-D with an Agena stage and a Midas III spacecraft was launched successfully from Point Arguello. It went into circular orbit 1,850 miles high as the heaviest upper stage yet boosted into high-altitude orbit.

Atlas 111-D, launched at Cape Canaveral, performed perfectly, but a Ranger I spacecraft failed to obtain orbit on Aug. 23.

The only unsuccessful attempt so far this year occurred on Sept. 9 at Point Arguello when an attempted launch of Atlas 106-D with a scientific payload failed.

Already a "workhorse" in the early space age, Atlas has been tabbed for more than 100 major launchings during the 1960s by NASA.



HURRICANE HELP—T. N. Lawrence, a GD/FW Dept. 75 electronics supervisor, personally handled more than 200 emergency messages over his short-wave radio during Hurricane Carla.

200 Messages

GD Ham's Radio Set Links FW With Hurricane-Hit Area

Hurricane Carla's only evidence in Fort Worth at the time was a gentle sprinkle of rain.

But on the Texas-Louisiana coast, Carla was a clawing, screaming, deadly harridan.

Fort Worth's atmosphere was calm. But thousands, including many General Dynamics employees, were worried about friends and relatives feeling Carla's fury. Phone and telegraph communication with the hurricane area was virtually impossible.

T. N. Lawrence, a GD/FW Dept. 75 flight line supervisor, was sleepy, but working hard.

In his "shack" behind his River Oaks home, he had been talking alternately into his radio mike and telephone, with only three hours' sleep in the past 24. Co-workers at the plant were calling

every few minutes, hoping he could get some word of friends or relatives in the disaster area. Mrs. Mary Ritchey, Dept. 63 clerk, was one.

She and her husband, E. Ritchey, a Dept. 94 supervisor, were worried about the safety of his mother, Mrs. Kyle Huebner, in Beeville. Lawrence was able to reach another ham in nearby Victoria, who volunteered to help.

Lawrence stayed at his radio post 30 hours in two days, with only brief intervals of sleep. He relayed more than 200 messages, many of them for GD/FW friends.

A licensed operator since 1935, Lawrence has performed the same service in numerous disasters, including Fort Worth's 1949 flood.

Toy Collection Starts Today in Annual Drive

Inspection and segregation of Fix-a-Toy donations starts today, and repair work by General Dynamics/Fort Worth volunteers will begin Oct. 9 at the Sheep Barn behind Will Rogers Memorial Coliseum.

"We'll use essentially the same area for repairing toys that we used last year," said Jim Kincannon, Fix-a-Toy general chairman.

Toy inspection and segregation will be under surveillance of Earl Weiher and R. C. Smith, co-chairmen.

Jimmy Harwell heads up repair activities, while C. C. Allen is serving as general coordinator.

Meanwhile, Kincannon urged employees to donate "repairable toys" of several types—dolls, stuffed and squeak toys, and others—which might be refurbished and passed on to some needy child this Christmas. Collection boxes have been placed at all entrance gates.

"If the toy won't fit in the box, call me at ext. 4325 and I'll make arrangements to have it picked up," Kincannon said.

Keep Guard Up! Colonel Warns

"If the American people allow their guard to slip, the communists will not hesitate to attack," stated Col. Frank E. Marek, Carswell Air Force Base Commander at the September meeting of the Society of Technical Writers and Publishers at Carswell AFB Officers' Club.

"The mission of the Strategic Air Command is to deter war, and, if necessary, to counter a communist threat by a strategic force powerful enough to insure military victory under any circumstance," commented the base commander in a speech given on "Mission of Strategic Air Command."

Employee Services Post Goes to Sears

Keith Sears, 15-year Convair veteran with more than 10 years' experience in employee services operations, has joined General Dynamics/Astronautics to fill a new post as employee services supervisor.

Reporting to J. R. Mitchell, chief of employee services, Sears will assist in administering all employee services activities at Astro.

A native of Salt Lake City, Sears has lived in San Diego for more than 20 years. He attended Balboa Law School (Cal Western).

Sears has long been active in church, welfare and youth activities in San Diego. At GD/Convair, where he has worked for the last 15 years, he was CRA commissioner of astronomy.



MANY FACETS—Charm has many faces as demonstrated here by Judy Frydenlund, Dept. 130-5, and these many aspects will be covered in ARA's self-improvement courses for women opening Oct. 3 at GD/Astronautics in San Diego.



YOUNG CHAMPION—Bruce Robinson in highland costume, displays some of trophies won for skill at Scottish dancing. He's added dozen more since photo was taken last year.

Trophies Galore

Highland Dancer, 13, Sensation During 'Invasion' of Canada

It's been a great year for "clan Robinson" as Bruce, 13, son of Averill (GD/Astro Dept. 143-3) and Charles Robinson (GD/Convair Dept. 42) earned international recognition with his highland dancing.

Young Bruce, who has won a roomful of trophies for his colorful Scottish dances during the past several years, captured the MacGregor Trophy at the Vancouver (B. C.) Highland Games last month—the first time in its history the trophy has left Canada.

At the same event he won first in sword dance and third in highland fling.

A week later, Bruce whirled through the games at Victoria with a first, second and third in sword dance, reel and "sean trubhais" respectively. At San Francisco's Highland Games on Labor Day he captured five "firsts," a

"third" for a "foreign" Irish jig, a gold medal, two trophies (one for California Championship), and a host of "bests."

Earlier in the year, the tartan-costumed youth collected other trophies at the Del Mar Fair, and at San Diego Highland Games.

Complicated routines of the authentic dances frequently have their origin in some event of Scottish history, and like most such folklore, have been intricately prescribed by tradition.

"The 'sean trubhais' for example, celebrates the release of the Scots from French domination, during which time they were forbidden to wear their traditional kilts," explained Mrs. Robinson.

"Bruce enjoys dancing," she added wistfully. "But at this point, we sometimes wonder where we'll put them if he wins more trophies."

Trades Desks

Young Scientist, Born in Congo, Joins GD/FW Research Group

A young Belgian scientist recently traded desks—thousands of miles apart.

Only a few weeks ago, Dr. Jacques Emile Romain was teaching mathematics in the Congo, where he was born and reared. Today, he's a staff scientist at General Dynamics/Fort Worth.

Dr. Romain, 35, is a member of the advanced design-applied research group at GD/FW, headed by Dr. E. L. Secrest. Although he has traveled widely in other parts of the world, it's his first time in the United States.

"I really didn't know what to expect," he confides. "But I like it very much." He's especially impressed by the friendliness shown him and his brunette wife, Ninette.

Dr. Romain was born in Elisabethville, Belgian Congo, where his father was a teacher in a government-sponsored school. Young Jacques was sent to Belgium for two years' pre-university training, and later, from 1945 to 1948, he attended the University of Brussels. He received his master's degree in mathematical physics in 1948.

Within a few months, the Romaines were en route to the Congo, where Dr. Romain took a professor's post at a government school in Usumbara. Meanwhile, he completed work toward his doctorate, awarded by the University of Brussels in 1952.

When the Belgian government established a university for natives in Elisabethville in 1956, he joined the staff there, remaining until July this year.

Sensing the future of the Congo might be "uncertain" with the advent of independence granted on June 30, 1960, Dr. Romain sent his wife home to Brussels the month before.

He feels lucky that he, too, escaped involvement in the rioting and upheaval that followed independence. He narrowly escaped it, however. En route to Brussels in July, his plane landed in Leopoldville for refueling. "They got the passengers back on the plane rather hurriedly," he recalls. "I didn't know until later that half an hour after our takeoff, the airfield was invaded."

Dr. Romain speaks excellent English, which he studied "a little" in school, but learned mostly during a four-month stay in South Africa.

The young physicist also speaks French, and can read German, Dutch, and "scientific" Italian.



LIKE HOTCAKES—Dee Ernst of GD/Astro employee services shows "Dynamic America" to Mr. and Mrs. J. B. Julian, both Dept. 576, as employees wait to purchase. Initial supplies at most points sold out quickly but reorders are on the way.

Electronic Manufacturing Forum Goes Through 'Dry Run' at GD/Pomona

A dress rehearsal of a forum to be presented Oct. 10 at the National Aeronautic and Space engineering and manufacturing meeting of the Society of Automotive Engineers was conducted Sept. 11 at General Dynamics/Pomona.

The forum, entitled "Electronic Manufacturing—Aerospace," will be conducted by J. Ferderber, manager of Hughes Aircraft Company's El Segundo Division, chairman; H. E. Jordan, GD/Pomona design group engineer, co-chairman; and H. F. Sawyer, GD/Po-

mona design specialist, secretary.

Panel members will be S. A. Francis, vice president and technical director of Sippican Corp., R. L. Johnson of General Motors, R. L. Landry of Motorola, Inc., and E. C. Sengletary of Texas Instruments. All except Francis and Sengletary were present for the rehearsal.

Jordan and Sawyer are among 18 General Dynamics men who will participate in various phases of the meeting.

GD/ASTRO'S ALBERT ON WATER BOARD

Sidney L. Albert, General Dynamics/Astronautics Dept. 567-6, was recently named to the San Diego Water Reclamation Commission by Mayor Charles Dail.

The newly organized 14-member commission will compile information and formulate policies related to reclamation of water from sewage, and advise the city manager and city council.

Albert has stated he will welcome ideas and suggestions concerning water reclamation from other employees. He served last year as president of the San Diego Industrial Development Council.

New Phone Number Assigned Bldg. 19

General Dynamics Corporation offices in Bldg. 19 at San Diego now have a new outside telephone number—CY-6-6666.

Starting this week, the CY-6-6611 number has been assigned to General Dynamics/Convair only. All calls are handled through the plant switchboard in Bldg. 8, as well as those coming in for General Dynamics/Electronics. That division's outside number is CY-8-4641.

In-plant calls can be dialed in the usual manner with company extension numbers.

Brothers Pool Their Spare Time As Racing Hobby Pays For Itself

An all-brother team, who have spent all their spare time for years working on their racing cars, are making their hobby pay for itself.

Their current entry, a strange-looking vehicle built around a 1923 Model T Ford roadster body, won the most main events in San Diego Modified Sportsmen racing last year and is leading the field this season.

David and Donald Peat, twins, and their older brother, Wallace, were first racing devotees to use the Model T body, first for jalopy racing and, since 1958, for modified sportsmen events. (David is in General Dynamics/Convair Dept. 192; his twin, Donald in GD/Astro's Dept. 220. Wallace is employed at Ryan Aeronautical Co.)

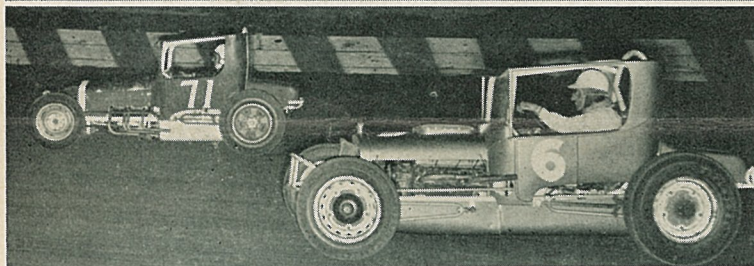
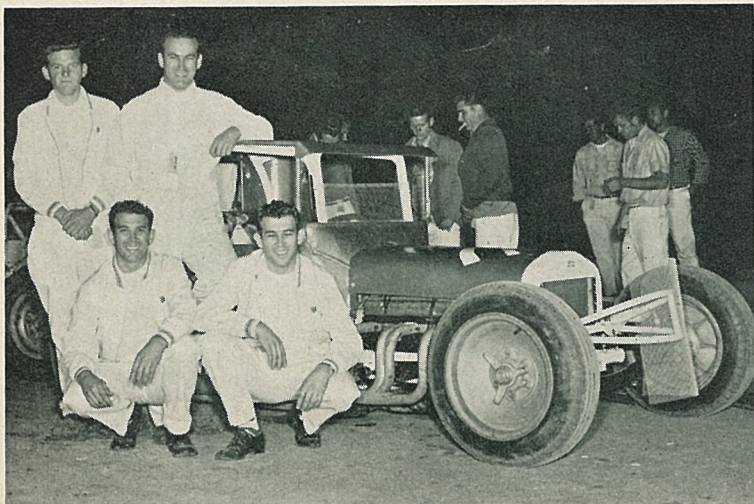
Their pitman, Pat Richardson, makes it almost an all-General Dynamics crew. He's in Dept. 250 at GD/Convair Plant 2.

They've hand-built four cars since they started in 1952. Their present entry took about four

months to put together in 1959 and has cost in the neighborhood of \$5,000. "Though, with its top racing record, it's been in the money enough to pay for itself!" said Dave.

It broke the speed record on the quarter-mile track at Cajon Speedway this summer, circling the oval in 17.13 seconds, with their driver, Don Edmunds of Los Angeles, at the wheel. Edmunds was named "Rookie of the Year" at Indianapolis four years ago.

The custom-made chassis is of chrome tubing, the engine, a 1960 Chevrolet. The T shell was salvaged from a wrecking company; aluminum hood, fire wall, and gas tank, from scrapyards. Biggest expense was the magnesium racing wheels with Indianapolis spot brakes and Firestone racing tires. Complying with Modified Sportsmen racing regulations its top is braced with steel roll bars and it is equipped with safety belts and shoulder straps for the driver.



WHAT IS IT?—In lower shot, strange vehicle at left (No. 71) is hand-built modified sportsman racer of Peat brothers sparked by 1960 engine under 1923 Model T hood. Above, are (kneeling) twins, Dave and Don Peat; (standing) Pat Richardson and Wallace Peat.

General Dynamics Men to Speak At Coming Management Institute

Four General Dynamics men will be on the roster of speakers listed for the coming Middle Management Institute in San Diego.

D. C. Wilkens Jr., General Dynamics/Convair manager of industrial relations; R. H. Nall, GD/Convair educational services supervisor; R. A. Ezekiel, GD/Astronautics management development specialist, and Donald D. White, administrator of PACE program at GD/Astronautics, will take part in the Institute.

Selected management personnel

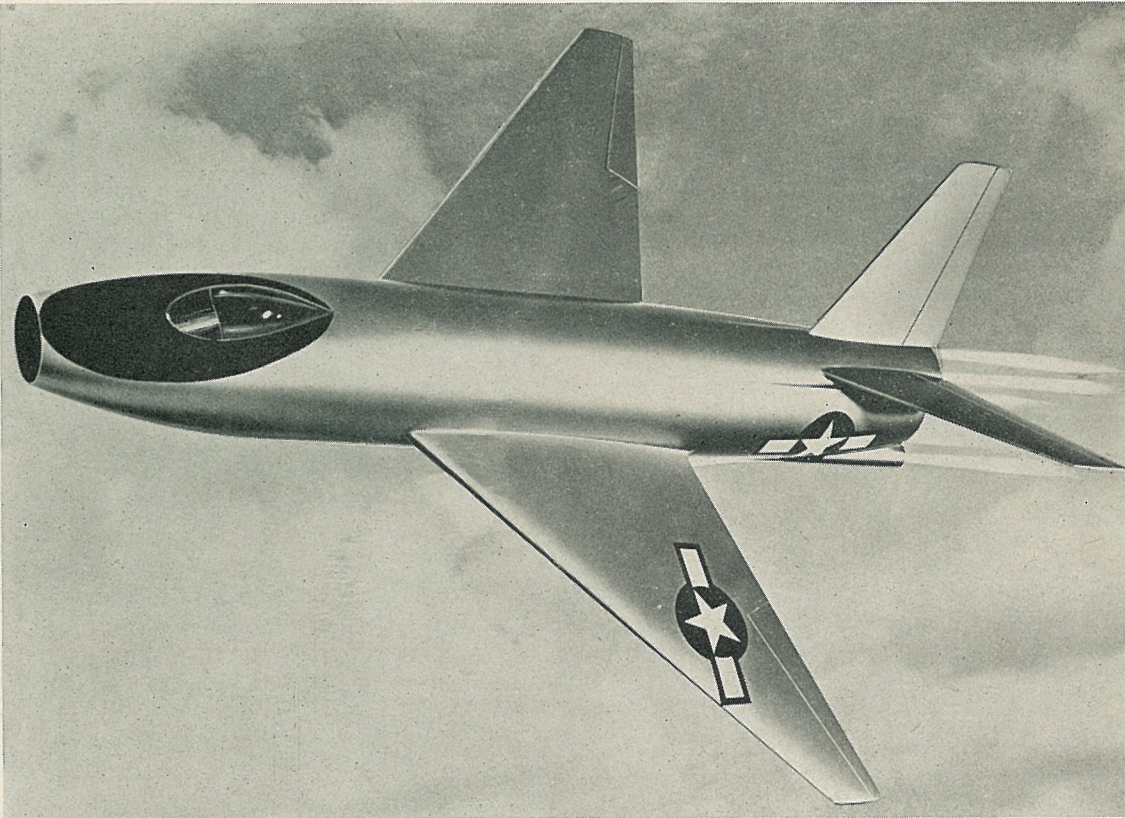
from General Dynamics divisions in the San Diego area will be registered in the advanced training lecture series.

Sessions will be Fridays and Saturdays on five alternate weekends, beginning Oct. 20 and ending Dec. 16, at Mission Valley Inn.

The Institute is sponsored yearly by UCLA's Institute of Industrial Relations and Graduate School of Business Administration, University of California Extension in cooperation with San Diego Chapter of American Society of Training Directors.



CLUB LEADERS—Representatives of four General Dynamics division Management Clubs met in San Diego recently. From left: G. D. Lombard of GD/Pomona; Dick Craig of Corporate Office; John Watson of GD/Fort Worth; R. W. Dill of GD/Convair; W. E. Magnuson of GD/Astro; T. R. Worthy of GD/Pomona; E. G. Henderson of GD/Fort Worth; and J. V. Kappler of NMA.



GREAT GRANDPAW—A forerunner of F-102 was swept-wing, V-tail, rocket-and-ramjet-powered XP-92 which won 1946 interceptor competition, but was never built. Disappointment with wing's characteristics led to experimentation with delta platform.

Disappointment

Wind Tunnel Tests Ruled Out XP-92, Though it Won Contest

(Installment No. 68 in a continuing history of General Dynamics products deals with early engineering development of designs which ultimately resulted in famous delta wing, used for F-102, F-106 and B-58.)

The original XP-92 configuration used a wing swept back at 35 degrees. Two so-called "desk models" were built and shipped from Vultee Field to Wright Field when entries in the design competition were judged in May, 1946. Afterward, one was mounted in Vultee Field's four-foot wind tunnel to obtain rough data.

Results were immediately disappointing. "Tuft tests indicate that a tip stall starts at a five-degree angle of attack," an early report showed. Lateral control difficulties were found, too. Engineers suspected an entirely new platform would be needed to meet performance requirements. On July 5 this historic notation appeared in the reports: "A 60-degree delta wing will be investigated this week."

The triangular-wing concept was not new. Pre-war studies by NACA had showed the theoretical high-speed advantages of various wing shapes having extremely low aspect ratios. Power plants for such did not exist. During the war a brilliant German designer, Dr. Alexander Lippisch (father of the Me-163 rocket interceptor) experimented with the delta platform. He built an unsuccessful delta glider (brought later to the U. S. and tested by the Air Force) and conceived the Jager P-13A. This design combined the triangular wing with ramjet power for a theoretical top speed of 1,500 mph. The plane was not built but the designs fell into Russian hands. (If used they showed what other post-war research has demonstrated, that the Lippisch wing was much too thick to have supersonic capabilities.)

At Downey, Calif., Adolph Bursstein, chief of design, was first to advocate giving the delta wing a try. Fillets shaped to fill internal angles behind the swept-wings created a delta of sorts. Tunnel performance was recorded July 12 as "the best to date." Learning that Lippisch was at Wright-Patterson AFB, Ralph H. Schick, chief of aerodynamics, arranged a conference at Dayton late in July. He returned convinced that the Convair design group was on the right track. Intensive investigation followed on alternate platforms, with leading edge sweepbacks ranging from 45 to 70 degrees.

One of the outstanding advantages of the triangular wing ap-

peared to be relatively low drag in the transonic region. Airfoils showed a sharp drag rise starting about Mach .9 and reaching a peak just above Mach 1, then tapering off as the "drag hump" was left behind. Vultee Field studies prepared for the Air Force in November indicated a peak drag coefficient of only .048 for a 60-degree delta, compared with .072 for a 45-degree swept wing of equal area.

These and later studies also proved the delta to be exceptionally stable in thin air, and to have good low-speed handling qualities, due in part to the absence of a distinct stall point. Additionally, it was realized that the triangular shape was inherently strong, permitting the structure to be at once thin and rigid; and that the delta's area (larger than that of a comparable straight or swept wing) implied greater internal volume for fuel.

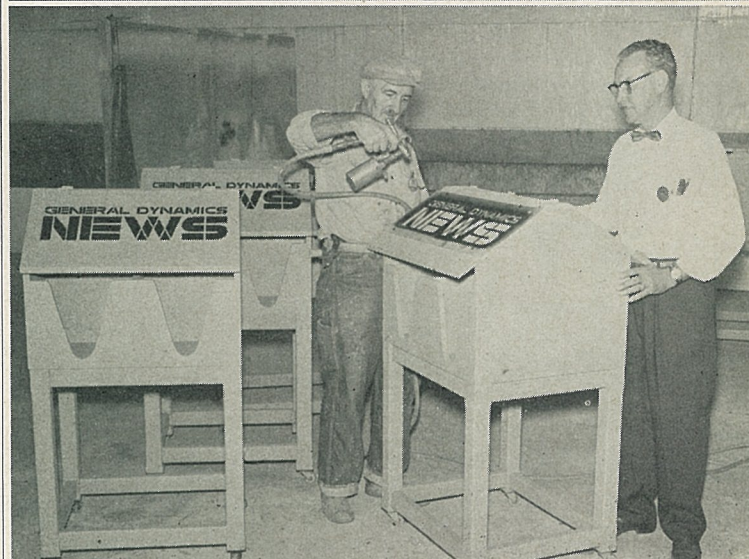
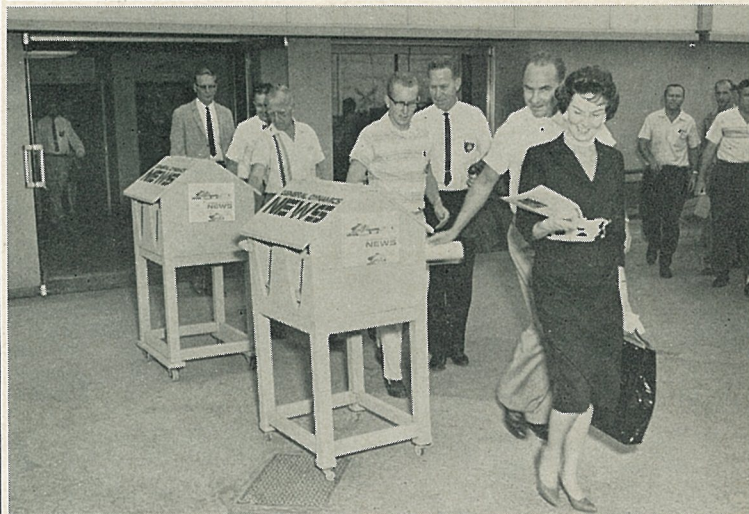
Rosenbaum Keynoter Of Training Society Western Conference

General Dynamics educational services staffs in the San Diego area will take part in the coming Tenth Western Regional Conference of American Society of Training Directors, Oct. 4-6.

Program chairman of the conference which opens next Wednesday at the Catamaran Hotel on Mission Bay is R. H. Nall, General Dynamics/Convair educational services supervisor. Host group is the society's San Diego chapter.

Keynote speaker at the opening morning session will be Mort Rosenbaum, executive vice president of General Dynamics/Astronautics. J. L. Budros, General Dynamics director of personnel administration, will be luncheon speaker on the same day.

B. P. Schroeder of General Dynamics/Pomona educational services will be a panel member at one of the conference sessions.



CHANGING TIMES—Sept. 13 saw first issue on street under new name "General Dynamics NEWS." At top was scene at Overpass No. 1, San Diego. Below, John Bender, Dept. 25, GD/Convair, changes name on boxes. With him is E. B. McMahon, assistant foreman.

CRA Solo Flyers Will Sponsor Another Ground School Course

A new ground school course will start next week at Jim's Flying Service, Lindbergh Field, sponsored by CRA Solo Flyers.

Rex Robinson, Convair engineer who has directed classes for the last five years, again will instruct.

Held twice each year, the

CRA Calendar

(Convair Recreation Association has some 40 activities in operation. For information on Convair sports, call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

BASEBALL — Tryouts Sunday (Oct. 1) 10 a.m. Golden Hill Playground for city league entry.

BOWLING — Awards dinner for summer league winners Oct. 14, 7 p.m., Michael's Restaurant, Lemon Grove. For reservations call Jim Hayman, ext. 1155.

CAMERA CLUB — Meeting Oct. 9, 7:30 p.m., CRA Clubhouse, Pacific Hwy.

GUN CLUB — Hunter safety course starts Oct. 7, 9 a.m., Gillespie Field Clubhouse.

ICE SKATING — Weekly ice skating sessions each Thursday, Iceland, 6055 Lake Murray Blvd., La Mesa, 6:30-8 p.m.

MOVIES — Reduced-price movies each Friday, Saturday, Sunday at Adams Theater, 3325 Adams Ave. Admission: adults, 50¢; children under 12 free if accompanied by adult.

PISTOL CLUB — Next shoot Oct. 8, 9 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB — Meeting tomorrow (Sept. 28), 8 p.m., Harbor Drive headquarters.

RIDING CLUB — Meeting Oct. 5, 7:30 p.m., Gillespie Field Clubhouse.

SOLO FLYERS — Ground school course starts Oct. 4, Jim's Flying Service, Lindbergh Field, 7:30 p.m. Call Rex Robinson, ext. 2265, Plant 1.

SPORTS CAR CLUB — Meeting Oct. 4, 7:30 p.m., Convair cafeteria executive dining room.

SQUARE DANCING — Beginners' classes still open for registration at tomorrow's (Sept. 28) session, 8 p.m., American Legion Hall, 4061 Fairmount Ave.

STAMP CLUB — First fall meeting Oct. 5, 7:30 p.m., Convair cafeteria executive dining room.

WATER SKI CLUB — Skiing Sept. 30, off Crown Point; Oct. 1-7-8, off Santa Clara Point, 9 a.m.-1 p.m.

WOMEN'S ACTIVITIES — Tickets on sale to fall fashion show (Oct. 18) at Plant 1 employee services.

Speedway Tickets Offered at Rate

Discount tickets to weekly motorcycle and modified sportsmen car races at the new Cajon Speedway are on hand at GD/Convair employee services.

Reduced CRA rates allow a 50-cent discount to motorcycle races, and 75 cents to Saturday modified sportsmen races.

courses cover Federal Aviation Agency rules and regulations to qualify students for private pilot's licenses. After completing the 19-week courses, they should be able to take and pass FAA examinations, said Robinson.

This fall, all foreign exchange students living with Convair people or their friends are particularly urged to join the training. Anyone knowing of any such students from other countries, wishing to take ground school instruction, may contact Robinson at ext. 2265, Plant 1.

Registration is taken at the first class session Wednesday, Oct. 4, 7:30 p.m. at the class location. Classes are held weekly on Wednesdays at the same time.

The first two class nights are devoted to general familiarization—including physical requirements, students permits, pre-flight checks, traffic patterns, etc. The next two weeks deal with theory of flight. Five weeks are devoted to study of navigation; meteorology; and finally, a month's review, before examinations.

Hunter Safety Course Slated

A new hunter safety course gets under way next week, in time for the quail and pheasant season.

Arnold Schrock is starting his seventh training course this year for young people of General Dynamics/Convair and General Dynamics/Astronautics families. Around 160 boys and girls, under 16, and half a dozen mothers have learned to handle shotguns and rifles since the first of the year.

According to California State law, the course is required before anyone under 16 years of age can get a hunting license.

Registration will be taken at the first Saturday morning class period (Oct. 7) at Gillespie Field Clubhouse at 9 a.m.

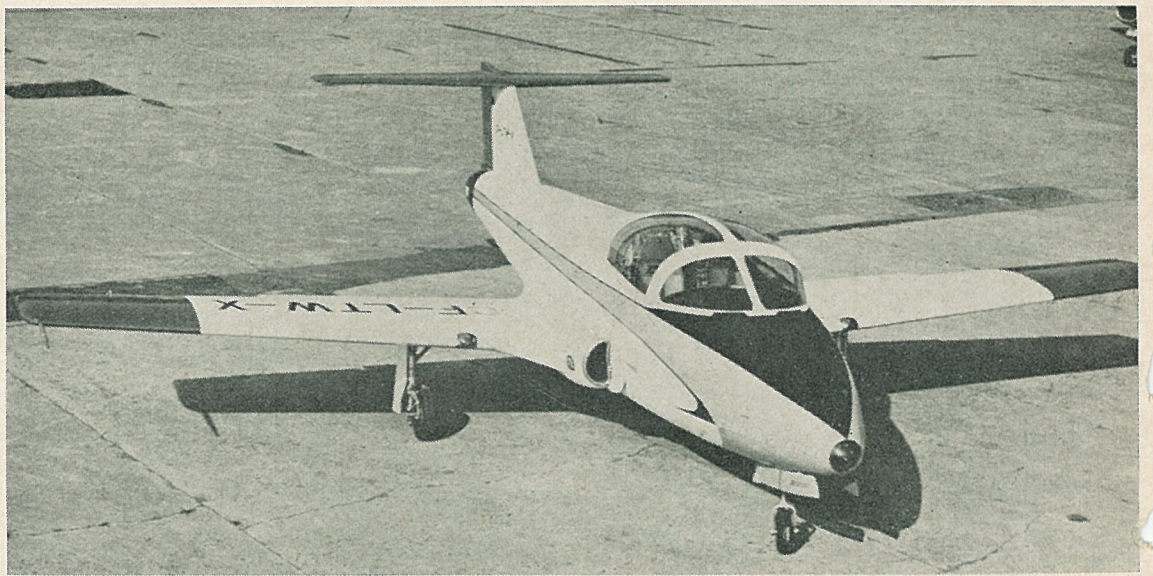
All wishing the training are asked to be there at that time, said Schrock. The course will continue for the two following Saturday mornings. Only charge is 50 cents each for brassard and ammunition.

SD's Joan Carlson Will Model Oct. 18

Joan Carlson (GD/Convair Dept. 3-1) will occupy the ramp at the coming "Winter Wonderland" fashion show as Convair's model.

A limited number of tickets, \$1.25 each, are still on hand at Plant 1 employee services, Martha Woodberry, chairman of the event, reported. Both men and women are invited to see latest fall fashions shown by Walker-Scott Co. at the Oct. 18 affair at the store's College Grove Center.

Sponsor is San Diego Industrial Recreation Council, which includes Convair Recreation Association.



ON TOUR—Canadair Limited's jet-powered basic trainer, designated CL-41, has been flown to Europe for demonstration tour of continent.

High Speed Microfilm Recorders Leased to North American Av.

SAN DIEGO—A leasing agreement totaling more than a quarter-million dollars a year for delivery of three S-C 4020 high speed microfilm recorders to North American Aviation, Inc.,



L. H. Orpin

was announced at San Diego, Calif. by L. H. Orpin, general manager of General Dynamics' Information Technology Division. The S-C 4020 is a revolutionary new electronic device designed to record data from large scale digital computers onto 35mm microfilm and/or 9 1/2-inch-wide photo-recording paper. The S-C 4020s will be assigned to research projects on the B-70 high performance aircraft program, to missile programs of the magnitude of Minuteman, and to rocket engine research utilizing the Atlas and Saturn boosters.

The S-C 4020 output will provide faster records than have heretofore been possible in such

areas as plotting fuel flow trajectories of various fuel systems; visual analysis of aircraft and missile wing-fuselage influence coefficients, etc.

In business and management area, the S-C 4020 will be used in cost analysis studies to show the effect of various parameters on the expense, for example, of a supersonic transport.

Skiing Sessions Start at 9 a.m.

Water skiers will wait until the sun comes up to take to the waters of Mission Bay with the arrival of chilly mornings.

During the next two weekends all skiing sessions start at 9 a.m. and continue until 1 p.m.

This Saturday, CRA skiers will go back to the east side of Crown Point for the Sept. 30 session; then for the rest of the weekend schedule move to Santa Clara Point, Oct. 1, 7, and 8.

With the removal of the 11 a.m. limit on water skiing off Santa Clara Point shores Oct. 1, the Convair club is extending its hours there until 1 p.m. The restriction in hours is observed during summer months to divide the location between skiers and sail boats.

Anyone interested in skiing or instruction may call Commissioner Gene Sevigny at ext. 1032, Plant 1.

Stamp Club Resumes Meetings For Fall

First meeting of the fall term for Convair stamp collectors will be Oct. 5, announced Jack Benedict, CRA commissioner.

The Stamp Club is moving to a new meeting place this year with regular meetings to be held now in the Convair cafeteria executive dining room on Pacific Hwy. Meeting time is 7:30 p.m.

The usual stamp auction will be held at the first session, said Benedict, who promised high-value British Colonies and general foreign stamps at bargain prices.

Show Features Unique Autos

Several General Dynamics/Convair people are heading arrangements for the 10-day Autorama, car show to be held Oct. 6-15 in Balboa Park's Electric Bldg.

Instrumental in bringing to San Diego over 100 unique cars and hot rods are three GD/Convair men, all members of the Asphalt Angels, local car club. Carl Caster of Dept. 48, as show manager, said that feature of the fifth annual showing of outstanding customized cars will be the two-wheel car of the future, "Gyron," coming from Ford Motor Co.'s Detroit, Mich., plant.

Assisting Caster are Tony Grato and Ron Rice, both of Dept. 145.

Also, numbered among contestants for Miss Autorama to be crowned at the opening night dance is Grace Delao of GD/Convair Dept. 142.

Discount tickets to the show are being handled through GD/Convair employee services.

Tryouts Scheduled For Baseball Play

Tryouts for Convair's baseball entry in winter league play have been set for this Sunday (Oct. 1) at 10 a.m. at Golden Hill Playground, 28th and Ash Sts.

If enough experienced players turn out, a Convair team will be entered in the city's American League, said Pete Beyrer, CRA commissioner. Entries are allowed five professional players.

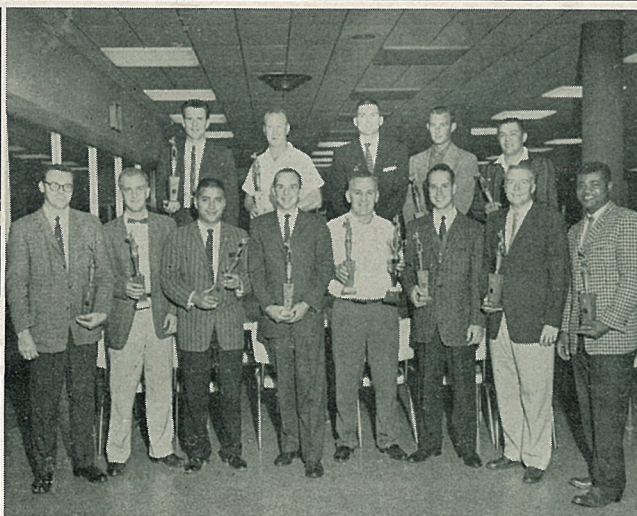
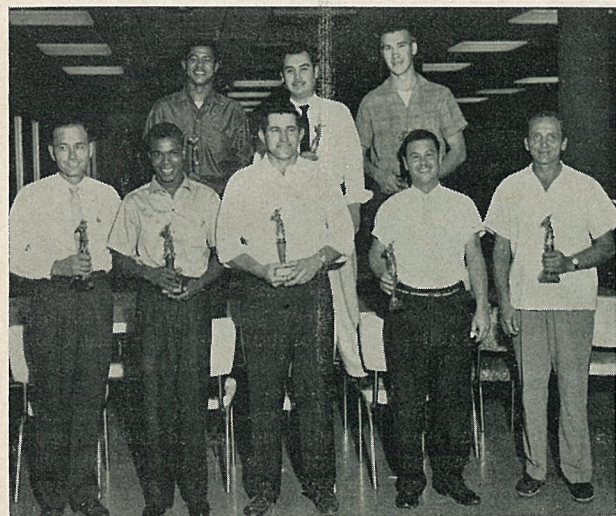
Practice will start in the afternoon of the same day and league play will get under way some time the middle of October.

Iceland Box Office Now Open to 7:30 p.m.

Convair ice skaters will have to check in at Iceland skate rink before 7:30 p.m. if they want to take part in weekly CRA nights there.

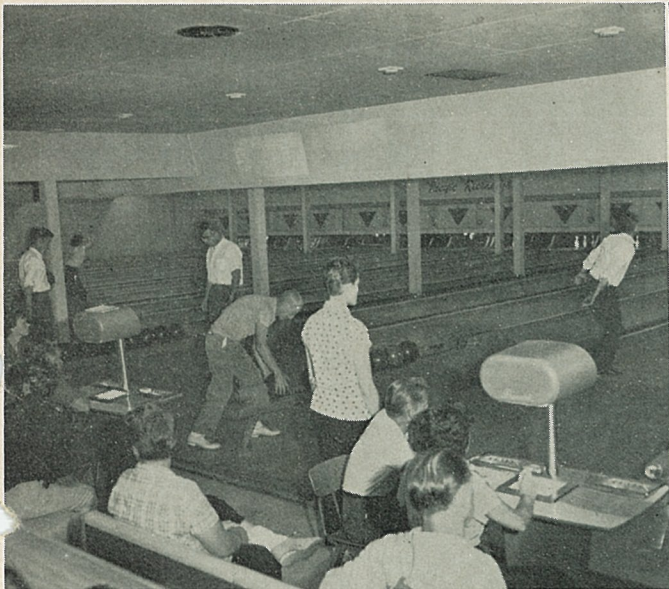
Martha Woodberry, commissioner, warns that, with the change of management at the rink, box office hours have been changed to 6:30-7:30 p.m. Skating hours remain the same, 6:30-8 p.m.

There is now no charge for spectators.



CHAMPS, ALL—Convair ace softball teams proudly hold trophies presented at award dinner Sept. 12 to all city league winners. Center shot shows Convair Eagles, winners of Industrial A League. Bottom row (from left) are Jim Speck, Norman Dahl, Chris Benavente, George Hargrove, Manager Dean Hoffman, Dee Trepanier, Curt James, George Cooper; top row, Les Phillips, John Evans, Jim Reichert, Gordon Heardburg, Jim Sanchez. Left photo is Dept. 137, winner of shop league first round. Bottom

row, from left, are C. Nelson, team captain; H. Payne, W. Holcomb, R. Reyes, C. Price, manager; in back row, L. Southern, B. Renteria, J. Callaway. Not shown: J. Adams, F. Garcia, F. Flores, L. Pierson. In right shot is Rose Canyon's champion shop tourney team. Bottom row, left to right, Jim Roberts, Manuel Chavez, Joe Kerna, Dale Sigmon, Rod Rodriguez, Manager Gil Chavez. Top row, from left, Ray Perez, Raul Neves, Eddie Maddox, Ricky Castillo, Jerry Zatarian.



HERE WE GO, AGAIN!—First night of winter league kegling finds Convair Wednesday night bowlers in action at Pacific Recreation. In left shot are Terry Burke, George Nichols of Alley Cats selecting balls; Elmer Hood of Hickenburps picking up ball; Vivian Schroeder of R-Selves waiting turn as Verne Barghols of Dreamers watches them fall. Keeping score are Paul Hayman of Hickenburps and

Isabel Corbett of Scramblers. Center, watching action are (standing) Frank Absher, Helen Sievers, Al Rainer, Jim Byler of Left Overs; (seated) R. Rawlins, Don Lauder, Katie Law, Roy Lawson of Christy's. At right, Isabel Corbett (Scramblers) and Joan Roberts (Alley Cats) try their luck on opening night. Ten day-shift, three night-shift leagues are rolling at seven bowl locations.

Sports Drivers Nab Trophies

Convair sports drivers stood among winners in recent San Diego sports car events.

Three teams took home trophies from GD/Astronautics "Photorama" Sept. 17. In the navigational class, driver-navigator team of Peter Aperlo and Nancy Starr placed second with an error time of .58 minutes. Third were Tom Kienholtz and George Blondin with 1.29 minutes. Mr. and Mrs. Vince Cappeletti scored 2.19 minutes for third in seat of the pants class.

The week before, Sept. 10, two Convair teams placed second and fourth in the sixth annual Palomar Sports Club "Rallye of the Stars." Called the largest San Diego sports car rally, the event attracted 180 contestants.

Kienholtz and Blondin nabbed second spot; Frank Fraine and Aperlo, fourth.

Taking four of the first five places in the Sept. 3 "Safety Fast II" rally sponsored by the San Diego MG Sports Car club were: first, Fraine-Aperlo, both of Convair; second, Bill Rector-Blondin of Astronautics; third, Kienholtz of Convair and George Kendall of Astro; fifth, N. Griffin-Chase Allen of Convair.

Next meeting of the Convair Sports Car Club will be next Wednesday (Oct. 4) in the Convair cafeteria executive dining room at 7:30 p.m. Meeting place has been changed from Natural History Museum to the cafeteria location.

Election results will be announced at that time.

Tickets on Sale For 'Dixieland'

Dixieland fans at General Dynamics/Convair can see, hear, and dance to such bands as Firehouse Five Plus Two, Young Men from New Orleans, or Louis Armstrong at Disneyland's special Dixieland night this Saturday.

Tickets at \$4.95 each are on sale at Plant 1 employee services. Price at the park for the Dixieland Salute will be \$5.50.

The one price admits visitors to all Disneyland attractions as many times as they like, as well as to the Dixieland performance at 9 p.m. in Frontierland.

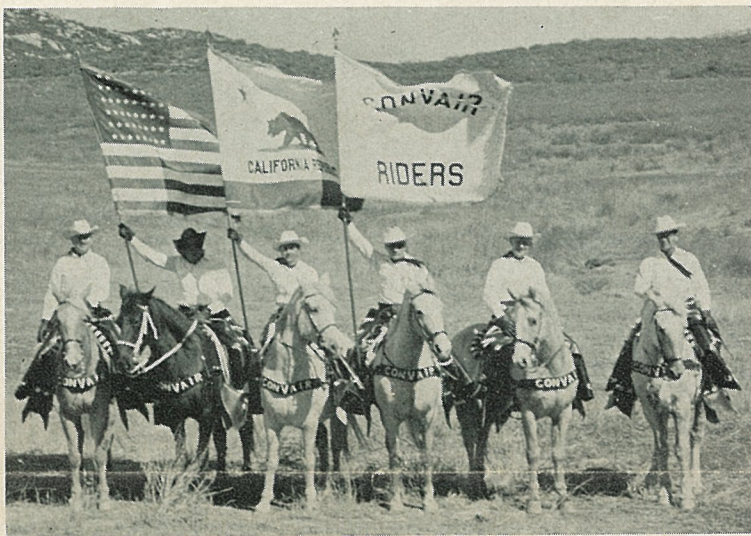
New fall schedule for Disneyland begins Oct. 2. After that date it will be open Wednesdays through Sundays, 10 a.m. to 6 p.m., and closed on Mondays and Tuesdays.

Family Swim Nights Dropped For Winter

Family swim nights for Convair families have been discontinued for the winter months, said Pete Beyrer, CRA commissioner.

The Mission Beach Plunge is shutting down earlier than usual this year for maintenance and refurbishing. It will open again the first of the year, so that it is probable that a Convair swim night will be held in January.

Sports & Recreation



BANNER CARRIERS—Convair's Color Guard, mounted on golden Palominos, led by Captain Luke Barbour on black Morgan mare (second from left), rode for seventh year in Grand Entry of San Diego County Sheriff's Rodeo this month. From left, riders are Roy Sims, Barbour, Don Westcott, Mel Ishmael, Hap Manion, Foster Kelly.

CLUB 'COLOR GUARD' HONORED ON RIDE IN CUYAMACA PARK

Eight riders of the Convair Riding Club were honored at a special breakfast and trail ride last weekend arranged just for them at Los Caballos Horse Camp in Cuyamaca Park.

The "Color Guard" Trail Ride was arranged by club families to show their appreciation for appearance of the mounted guard in the Grand Entry of the San Diego County Sheriff's Rodeo the previous weekend. This was the seventh year the six-man team had been invited.

Captained by Luke Barbour (Dept. 180) on his black Morgan mare, the club's Color Guard accepts invitations to ride in at least 20 parades a year. They drill at least twice a month to keep in top condition.

All other riders are mounted on golden Palominos. Barbour carries the United States flag, accompanied by his honor guard, Roy Sims (Dept. 280). In formation behind them ride the four others with two honor guards flanking riders with the state flag and Convair Riders banner.

Besides Barbour and Sims, members now are Don Westcott, Dept. 605; Mel Ishmael, Dept. 15; Hap Manion, Dept. 280; and Foster Kelly, Dept. 180. Stand-by alternates are Jim Hill, Dept. 400; and Turner Albright, Dept. 93.

The club's Color Guard has been in existence at least 15 years with probably 60 riders taking part in it over the years.

Club members will turn out for the next regular meeting at Gillespie Field Clubhouse, 7:30 p.m., next Thursday (Oct. 5).

257-lb. Bass Landed By Diver Al Jones

Al Jones (Dept. 95), member of Convair's skin diving group, Delta Divers, has proved his prowess as an expert spearman of underwater inhabitants.

In the last month he has brought up two oversize black sea bass, both in excursions off Coronado Islands. Largest was a 257-pounder, the other weighed in at 120 lbs.

Darkroom Facility Will Be Inspected

Camera Club members will gather at CRA Clubhouse on Pacific Highway, across from Plant 1, at their next meeting to inspect darkroom facilities there. The CRA group will meet Oct. 9 at 7:30 p.m.

Beginners, particularly, will be briefed in the "hows" of black and white film and print processing and introduction to the club's darkroom.

"We hope that there will be many new faces with questions and many old faces with the answers," said Ron Ainsworth, club spokesman.

Visitors are welcome.

Summer Keg Champs To Receive Awards

Annual award banquet for summer league bowling champs at Convair has been set for next month.

Date will be Oct. 14; place, Michael's Restaurant in Lemon Grove; kickoff time, 7 p.m.

All league champions who have not yet made reservations are urged to contact Jim Hayman, CRA commissioner, as soon as possible. Hayman may be reached at ext. 1155, Plant 1.

Bowling Teams Bunched For Early Loop Leads

First week standings of Convair bowling leagues showed teams tightly bunched for the lead.

Alley Cats, Raiders, Teenie Weenies of Engineering Mixed, rolling Thursday nights at Victory Lanes, stood even with 4 wins, no losses. Bad Pennies and Hits and Mrs. each had dropped a game.

Alley Cats had high team game score, 805; Four of a Kind, high team series, 2367; Marcia Hatfield, high woman's individual game, 244; Cherry Morrison, high woman's series, 606; Tom Hatfield, high men's game, 237; Ray Crawford, high men's series, 631.

Sq. Dance Class Closes Sept. 28

Eight squares of beginning square dancers reported to the first session of the new dance course Sept. 14, said Maury Scholz, CRA commissioner.

Others wanting to learn basic square dance steps right from the beginning may still enter at this week's class tomorrow (Sept. 28). The beginners class remains open for enrollment for the first three sessions, explained Scholz.

Don Browne, instructor for Convair square dancing classes, will be on hand to lead beginners through the intricacies of the popular form of dancing.

Anyone interested is urged to turn out tomorrow at 8 p.m. at the American Legion Hall, 4061 Fairmount Ave. Either singles or couples may join.

Model Railroaders Attend Conference

Karl Busch of General Dynamics/Convair and Bill Worthington of General Dynamics/Astronautics represented San Diego model railroaders at the annual N. M. R. A. convention in Cleveland, Ohio, Aug. 24-27.

Busch (Dept. 15) attended in his capacity as editor of the National Model Railroad Association publication and Worthington of Astronautics Dept. 120-5, in his position as president of the San Diego Model Railroad Club.

Bill Buff Ends Game With Five Strikes And Shoulders \$2,145 in Prize Money

A heavy bag of silver dollars was a welcome burden to Bill Buff (General Dynamics/Convair Dept. 31) when he shouldered \$2,145 as top bowler in this year's Silver Dollar Jubilee kegling contest at San Diego alleys.

Five strikes in a row at the end of his sixth game put him just eight pins ahead of nearest competitor to bring him top prize money of \$2,000 for best singles. Buff's gross score was 1,348 with a 164-pin handicap —highest score rolled by any of the over a thousand keglers trying for hard cash in the

In Wednesday night bowling at Pacific Recreation, Odd Balls were leading the Convair Mixed Masters 700 League. They had both high team game and high team series, 833 and 2353.

M. Malcangio had high individual men's game, 221; J. Finn, high individual series, 559; Barbara Bugbee, high woman's game, 181; Bev Lyons, high woman's series, 436.

Hickenburps and Confused Five were on top in Mixed Scratch League, both winning all four games.

High scores showed Jim Hayman, CRA commissioner, holding both high game and high series scores, 234 and 588. Vivian Schroeder did the same for the women, 170 and 475. Hickenburps had high team game of 851 and Timber Jets, high team series, 2365.

Convair 725 Mixers were in their second week at the new Frontier Lanes with Left Overs and Windy Wonders tied at 7-1.

F. Absher had high individual men's game of 214 for the week; R. Horner, high individual series, 577; Billie Troy, both high women's game and series, 189 and 518. Left Overs had high team game of 828; 2 x 3s, high team series of 2348.

HALFACRE LEADS SEPT. 10 SHOOT

Jim Halfacre, Joe Williamson, Carl Hornburg stood one-two-three in the short national match at Convair Pistol Club's Sept. 10 competition.

Halfacre (Dept. 180) topped the .45-caliber event with a score of 257; Williamson (Dept. 401-5) trailed with 251; Hornburg (Dept. 139) was third with 245.

Hornburg took master class in the .22 caliber police course with 290 with Halfacre second with 288.

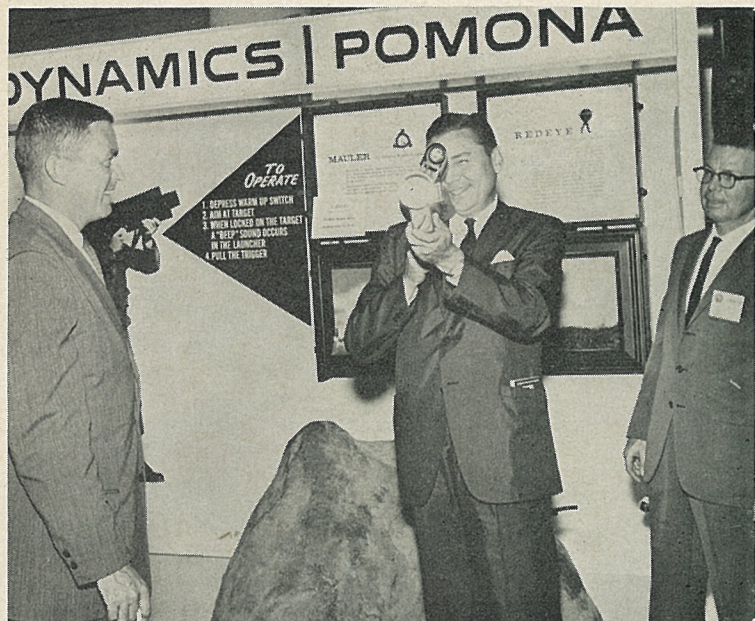
In the expert E. E. Bickar (Dept. 215) was first with 281; Ralph Picard (GD/E-Dept. 6), second, 278. Ralph Benson, whose wife is a Convair employee, was top sharpshooter with 266. Arley Utter (Dept. 128) came in second with a score of 256.

Jubilee bowling tourney.

Buff, who will roll regularly in a 875 major league at Palm Bowl this season, went into tourney play with 159 average. Performance in the contest has bumped his average way up in the 180s.

The rest of the prize money, \$145, was earned in the team event the night before the grand play-off at Parkway Bowl.

A little stunned by his wind-fall, Buff said he hasn't any spending plans as yet, except that part of it probably would go toward a car.



ON TARGET—In photo at left above, Secretary of Army Elvis Stahr tries Redeye simulator during recent Association of U. S. Army meeting in Washington, D.C., with E. J. (Ted) LeFevre, left, now General Dynamics assistant vice president and general manager of Washington Office, and Vince Johnson, GD/Pomona Redeye project office. In photo at far right Gen. Clark L. Ruffner, U. S. Military Representative at NATO, tries his hand.

U.S. Jet Ace Checked Out In Hustler at Mach 2

America's first—and top—jet ace was “tremendously impressed” with his recent checkout ride in a B-58 Hustler.

“The Hustler's performance was outstanding,” said Col. James Jabara, who for a time put a B-58 bomber through Mach 2 paces. It was his first time at the stick of a four-engine airplane.

Colonel Jabara recently volunteered for B-58 duty and is now enrolled in 43rd Bomb Wing's Combat Crew Training School.

The crack fighter pilot of two wars said the Hustler appeared to be a “fine weapon system” which could very likely maneuver with many fighter planes.

He is eminently qualified to draw a comparison, for it was in fighters of different eras—the P-51 Mustang of World War II

and the F-86 Saber Jet of the Korean conflict—that he registered 18½ enemy planes destroyed.

He became this country's first jet ace when he blasted 15 Russian-built MIG-15s out of Korean skies on two separate tours in 1951 and 1953. Thus he became—and remains—America's top jet ace.

He noted that kills were far more difficult to come by in jets (600 mph) than prop-driven planes.

“And the speed of today's supersonic fighters would make aerial combat even more difficult,” said the colonel, who recently flew F-104s.

Other first-impressions from flying a four-engine bomber: “More individual discipline and know-how on the pilot's part.”

Redeye-Mauler Display Viewed By Thousands

An estimated 3,000 persons visited the General Dynamics/Pomona Redeye-Mauler display early this month at the annual meeting of the Association of the U. S. Army in Washington, D. C.

The display featured a Redeye “shooting gallery” and shadow boxes featuring pictures of Redeye and Mauler missiles. In the “shooting gallery,” visitors were permitted to shoulder a Redeye missile launcher and simulate firings against a model helicopter target. Proper operation of the launcher resulted in launch sound effects and simulated destruction of the target.

Among high-ranking visitors who operated the Redeye simulator were: Secretary of the Army Elvis Stahr; Gen. Clark L. Ruffner, USA, U. S. military representative to NATO Standing Group; Gen. Bruce C. Clarke, USA, commander in chief of the U. S. Army in Europe; and many other representatives of the U. S. Army and foreign military establishments.

G. I. Siegel of customer requirements plans and programs was responsible for the unique design and concept of the display booth. V. W. Johnson, of Redeye project office, was responsible for the electronic packaging for the “shooting gallery.” The booth was manned by Johnson, Siegel, and D. O. Campbell of General Dynamics/Pomona.

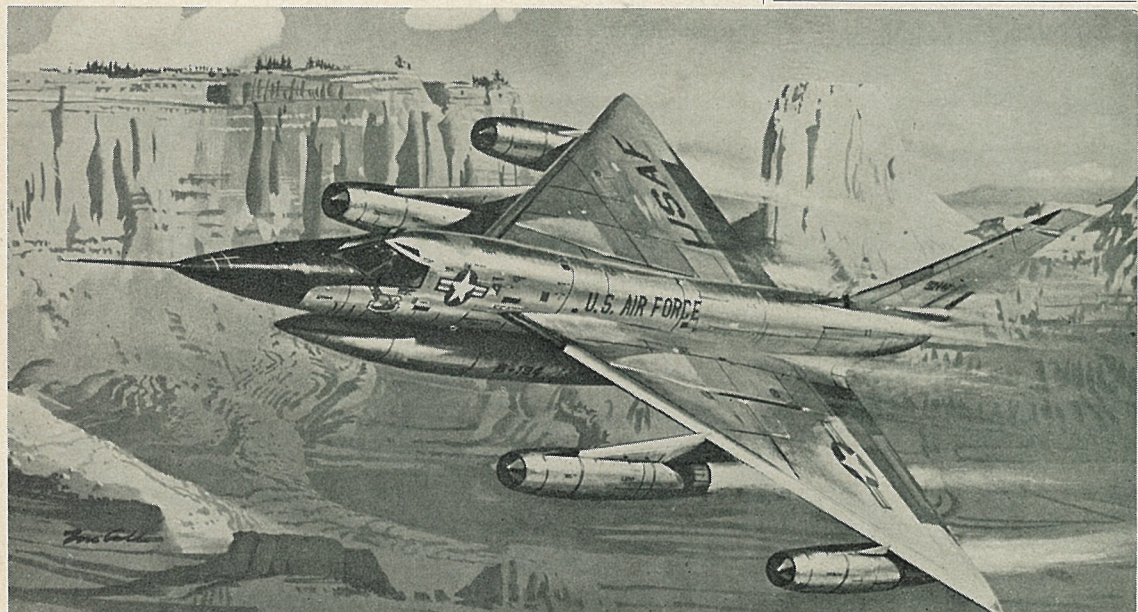
Troop Carrier Wing Seeking Reservists

An invitation to Air Force Reserve members to join the 452nd Troop Carrier Wing at March AFB, Riverside, has been extended by the squadron flight commander, Major G. D. Hoffman, GD/Astro Dept. 521-1.

The pay-status reserve unit has openings for both officer and enlisted personnel. Call ext. 3216.



SMOOTH—Col. James Jabara, America's top jet ace who recently joined 43rd Bomb Wing, recounts first ride in B-58 Hustler to Col. J. A. Hutchison.



LOW-LEVEL—Artist's conception shows Mach 2 Hustler on low-level mission. B-58 can fly up to Mach .9 at altitudes of less than 500 feet, making it difficult, if not impossible, to detect by radar and equally difficult to intercept.

Nine Squadrons Groom Convair Deltas as 'Trial By Combat' Approaches

Nine Air Force squadrons flying Convair-built jet interceptors will enter teams in the 1961 USAF Worldwide Weapons Meet (William Tell) at Tyndall Air Force Base in Florida next month, Oct. 23 to Nov. 3.

Matching weapon firing capability in a normal air defense environment will be four F-106 teams; five F-102; and four F-101.

Teams flying F-106s will represent 539th Fighter-Interceptor Squadron, McGuire AFB, N. J.; 11th FIS, Duluth, Minn.; 498th FIS, Geiger AFB, Wash.; and 456th FIS, Castle AFB, Calif.

F-102s will go from 331st FIS, Webb AFB, Texas; 59th FIS, Goose Bay, Labrador; 317th FIS, Elmendorf AFB, Alaska; 182nd Air National Guard squadron, Kelly AFB, Texas; and 3555th Combat Crew Training Wing, Air Training Command, Perrin AFB, Texas.

No squadrons based outside of the United States with USAF in

Europe or Pacific Air Command will be entered in this year's competition.

Jet interceptors, all of the Century series, will demonstrate effectiveness of their weapon systems against Q2C drone targets launched either in the air or from the ground. F-102 teams will compete in a manual control environment using voice communication; F-106 teams will go through maneuvers in SAGE (Semi-Automatic Ground Environment) with data link communications.

F-102s are equipped with GAR-1D missiles; F-106s with MB-1T and GAR-4 missiles.

Recognition will be given top aircrew - controller - maintenance teams.

Coordinating General Dynamics/Convair's participation is H. J. Richardson of military requirements, named GD/Convair project officer by J. H. Famme, division general manager. Hosting the 1961 Weapons Meet is the Air Defense Command.



GET SET—Among AF teams getting set for Weapons Meet in Florida next month are these members of 456th FIS at Castle AFB Calif. Above, from left: Lt. Col. James L. Price, 1st Lt. Everett E. Dencklau, Capt. William A. Curnutte, pilots; standing: Maj. Joseph A. Mentecki, materiel control officer, C. W. (Chuck) Stevens, GD/Convair rep, 1st Lt. Rex D. Howerton, pilot, 1st Lt. Christopher D. Pulos, A&E.

B-58 Over Water Pod Drop A Success Off Florida

A successful pod drop over water was made by Hustler No. 38 recently off the coast of Florida near Fort Walton.

Pilot Fred Voorhees made the supersonic drop of an upper component at an altitude of 35,000 feet at Mach 1.6.

“The sortie demonstrated successfully that the pod's aiming and fusing system will function properly on water impact,” said Jim Graham, team captain.

Attempts by two Navy crash boats and a 105-foot Navy barge to locate the upper component after the drop were unsuccessful. However, telemetry data produced positive results.

Two distinct shock waves—one by the Hustler and the other by the pod—were created by the drop. “But everyone in the area had been briefed on what to expect,” Graham said.

Jim Hayden, GD/Fort Worth photographer filmed the drop from an F-104 furnished by Air Force Special Weapons Center. Another FW photographer, Bill Williams, filmed the event from an F-106B from Tyndall AFB at Panama City, while Gene Hartsman took pictures from a helicopter.

Fred Hewes flew second station

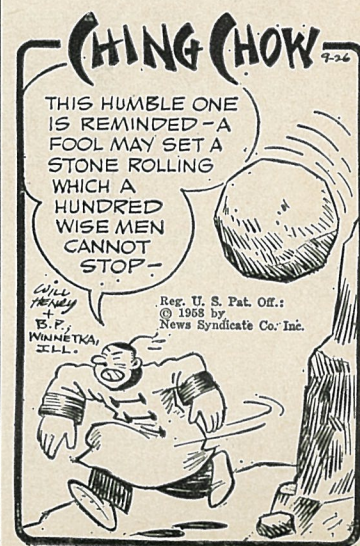
on the mission, and Ken Timpson occupied third station.

Graham lauded Team Captain B. L. Schultz and his crew for having the plane ready for flight “the day after Labor Day.”

A low-level, upper-component drop over Test Area No. 75 at Eglin AFB was considered a “partial success.”

The low-level run, aimed at confirming integrity of the pod system at sea-level conditions, was to be made again. Also upcoming is a low-level drop of the tank (lower component of the two-component pod).

All drops at Eglin are the first made at sea-level. For some months, Hustlers No. 4 and 38 have been used for both low and high-level pod drops over both the Tonopah Test Range and White Sands Missile Range.



CONSERVATION!

Not Conversation--



THANKS!—F. H. McLaughlin, manager of factory production at GD/Convair, shakes hand of Rose Ponchetti of Dept. 139 as transport aft fuselage primary people point out sign proclaiming their job on ship No. 10-16, Convair 990, 100 per cent complete on schedule. Larry Roth, Dept. 139 foreman, at right of Rose, was responsible for banner!

JAL 880-Ms Servicing Hong Kong and Bangkok

Convair jetliner service expanded into far parts of two hemispheres this month as Japan Air Lines' 880-Ms went into operation in the Far East and other lines added new ports both in this country and abroad.

Two of JAL's Convair 880-Ms began carrying passengers Oct. 1 to Southeast Asian points. Hong Kong service is eight times each week with non-stop flights from Tokyo. Time scheduled for the 1,787-mile flights is four hours.

Non-stop flights are made twice a week to Okinawa and three times a week to Taipei via Osaka. Three flights each week link Tokyo with Bangkok and Singapore via Hong Kong.

JAL's Convair 880-M flights will go all the way to London by 1962, making stops at Calcutta, Karachi, Cairo, Rome, and Frankfurt.

Viasa of Venezuela received its second 880-M the end of September and plans to begin operation of a non-stop round trip every Friday from Caracas to Miami. Flights will go twice a week, on Sundays and Wednesdays, from Caracas via Maracaibo to Miami; and Thursdays and Saturdays, over the same route to New Orleans.

This service is in addition to the existing three-times-a-week schedule from Caracas to New York.

Swissair is now operating 880-M flights from Zurich, Switzerland, to Tokyo.

On the domestic scene, Delta Air Lines added another city, Birmingham, Ala., to its network the first of this month. By the middle of October it will be sending 880-M flights into San Francisco and resuming stops at Dallas.

Alkazin Appointed Director To Round Out Manager's Staff

Title changes, and appointment of a director of contracts, planning, and service parts, complete formation of administrative staff of J. H. Famme, vice president and general manager of General Dynamics/Convair, effective this week.

J. J. Alkazin, former assistant to the division manager, will head contracts, planning, and service parts activities as director. Alkazin's appointment completes a roster of seven directors, with the recent title change from manager. Division counsel, division controller, and chief engineer also report directly to Famme.

Other directors are: R. A. Neale, operations; W. R. Bruce, material; H. C. Chambers, marketing; R. K. Gottschall, communication; W. J. Martin, quality control and production flight; D. C. Wilkens Jr., director of industrial relations.

M. P. Lovett is division counsel; B. J. Simons, chief engineer; and D. C. Burrows, division controller.



J. J. Alkazin

Alkazin, a native of New York City, joined Convair in 1949 as manager of contracts. During the years since, he has held top positions in service engineering and customer service functions. Before joining the company he was assistant director of aircraft procurement with American Airlines, Inc., at the San Diego office for a number of years.

Reporting to him in his new post are F. S. Chambers, manager of contracts; John Doig, chief of service parts; and I. D. Sykes, manager of planning.

Neale, as director of operations, is responsible for administering all manufacturing activities within the division, including the supporting services.

Recent appointments include F. H. McLaughlin, manager, factory production; W. D. Reed, manager, subcontract production; and A. B. McFarland, manager, development and modification production. They report to Neale.

Bruce, director of material, heads procurement and material operations. Procurement manager is L. A. Wood; material operations manager, G. W. Zahrt; material cost manager, C. M. Gauss; subcontract administration manager, E. F. Monsees.

(Continued on Page 2)

Management Officers Heading to Chicago

R. W. Dill, president of General Dynamics/Convair Management Club, and his executive officers will be in Chicago, Ill., this month to attend the annual National Management Association Convention.

Others planning to be at the Oct. 25-27 meeting are E. W. Fink, first vice president; C. L. Ambler, second vice president; R. M. Montgomery, treasurer; E. V. Laird, recording secretary; and W. J. Wood, financial secretary.

Service Reps Fan Over U.S. With Jetliners

Over two dozen GD/Convair transport field service representatives are located in nine cities across the United States and four foreign countries in support of Convair 880 and 880-M jetliners now in service with eight airlines.

The number sent into the field has been increasing steadily, pacing jet transport deliveries, since the first man, Hank Bohmbach, was assigned to Kansas City with Trans World Airlines in the fall of 1959. Next out was Bob Fitzgerald, to Atlanta, Ga., to prepare for Delta Airlines' first 880 in early 1960.

Present assignments include: Len Paul and Carl Hill at Los Angeles with TWA and Delta; Bohmbach and John Laudenslager at Kansas City with TWA; Joe Dennis at Atlanta with Delta.

Ed Griffin at Chicago with TWA and Delta will be replaced by Bill Lewis within the next week. Griffin will then be back in the San Diego plant for 990 training and reassignment.

At New York servicing TWA, Delta, and Northeast Airlines are Hank Morgan, Tex Ashmore, and Dave Weitzman. Walt Belliston and Bill Anthony are with Northeast in Boston; Bob Fitzgerald at Miami with Northeast and Delta. Frank Hollingsworth, formerly at Miami; Al Koster from Boston; and Weitzman are being drawn into the 990 training program at the home plant.

Charlie Kurtz and Jim Sauer recently joined John Novak at Seattle to assist with training program for Alaska Airlines. Bob

(Continued on Page 2)

Full Cooperation Solicited For New Materials Drive

A five-man committee to head up material handling activities at General Dynamics/Convair has been named by R. A. Neale, director of operations, as the current program swings into high gear.

R. M. Hatcher, manager of operations planning, will chairman the directing group. Others are F. H. McLaughlin, factory production manager; G. W. Zahrt, material operations manager; V. F. Cernuto, chief of manufacturing control; and W. J. Martin, manager of quality control.

At the same time, material handling section, formerly a part of facilities engineering, has been transferred to transportation operations (Dept. 21), directly under B. R. Hisaw.

According to Hatcher, the move strengthens the overall program. With the present reorganization the function is in the department that controls and utilizes a large portion of material handling equipment within the company, he explained. However, he re-emphasized the importance of cooperation of all departments involved

in handling, storage, and movement of parts to reduce damage costs.

Increasing emphasis will be placed on careful treatment of all materials. Experienced material handling men are being recruited to establish most effective methods and standards; to conduct regular plant inspections of material handling practices; and to set up training courses.

This group will report weekly to the executive material handling committee.

A division-wide training program, now being formulated through cooperation of educational services, will go into effect within the near future for supervision and others involved in all phases of material handling.

Dependent Insurance Rates Go Up 30 Cents With Claims Increase

A weekly raise in cost from \$2.77 to \$3.07 in dependent group insurance, major medical, was effective Oct. 9, D. C. Wilkens Jr., director of industrial relations, announced.

Affecting all employees who have dependent coverage, except those represented by IAM (not under major medical), the increase was necessary because premiums charged were less than claims paid, Wilkens explained.

Wilkens said the increase was regrettable but "an indication of the importance of this coverage to our overall plan."

Management Club Seeks Volunteers

Joe Gliebe (Dept. 249), Management Club board member, will be in charge of selecting 20 GD/Convair volunteers for United Fund's annual fall drive.

Traditionally a club project, Gliebe appointed M. C. Tombler (Dept. 6) to coordinate activities.



HOT TIME—Roaring Twenties were revived at annual fall dance of GD/Convair Management Club Sept. 30 in Balboa Park Club when 500 had fun of digging out fur and fringe, and brushing up on Charleston for dance contest.



QUARTER CENTURY MEN—Latest General Dynamics/Convair men to merit 25-year service emblems are, from left, C. J. Spitz (Dept. 401); S. M. Shepard (280); C. H. Hahn (8-4); H. A. Daw, (401); J. B. Sterling (31); R. T. Scott (48-09).

Log Book Entries

Service Emblems

Promotions

CONVAIR
Service emblems due during the period Oct. 1 through Oct. 15.

Twenty-five-year: Dept. 1-65, G. D. McKicker; Dept. 5, E. B. Kellogg.

Twenty-year: Dept. 3, Bjarne Carlson; Dept. 6-03, C. L. Bobo; Dept. 14, Evelyn C. Finley, R. V. Sinnott; Dept. 16-5, Lynn M. Jaquish; Dept. 25-2, E. A. Guidotti; Dept. 31, L. A. Salgado; Dept. 91, Charles Garrity, William Pabst.

Dept. 115, C. E. Hutz, J. K. McDonough; Dept. 116, C. P. Beauregard; Dept. 135, J. L. Moore; Dept. 137, F. C. Darnell; Dept. 139, Miguel Reyna; Dept. 140, F. H. Kleckner; Dept. 141, R. E. Handley; Dept. 145, M. L. Gee; Dept. 171, L. A. Quick; Dept. 188-5, R. D. Williams; Dept. 192-2, C. B. Hill; Dept. 215, Alvin Becker, Kenneth Curry; Dept. 400-1, G. E. Nuss.

Fifteen-year: Dept. 3-3, Elsie M. McGowan; Dept. 6, J. M. Bowyer Jr., Onita S. Miller; Dept. 31, R. L. Hall, Ellie F. Jenkins; Dept. 48, F. E. Clark, W. W. Egan, C. H. Sherman, L. B. Tilley; Dept. 115, P. D. Disney, Paul Perrero, H. B. Wilson; Dept. 116-0, Margarette M. Genaro; Dept. 133, Cruz Acevedo, G. E. Lantz; Dept. 141-1, Louis Flores; Dept. 206, W. L. Dana; Dept. 215, M. L. Ferrell; Dept. 400-1, R. A. Sjolund; Dept. 401, A. J. Ruud, W. A. Wooding.

Ten-year: Dept. 1-24, F. M. Eynkoop; Dept. 1-65, Marie L. M. Calvert; Dept. 2-2, Mary E. McNeil; Dept. 3-5, Olga K. Fort; Dept. 4, Virginia E. Galvin, E. F. Monsees; Dept. 5, L. H. Newbrough; Dept. 6, Jo Anne Bray, C. R. Braun Jr., A. C. Eulberg, H. W. Hem Jr., B. A. Machado, C. D. McIntyre.

Dept. 14-4, Marjorie B. Taylor; Dept. 15, Barbara C. Barbat, H. R. Rhynsburger; Dept. 16, W. T. Duerson, R. E. Thompson; Dept. 21-1, Sam Adkins; Dept. 31, Andrew Dyzeko, Clifford Jones; Dept. 48, B. B. Balmos, A. V. Black, Mary Y. Caulk, Dorothy P. Doren, P. L. Ingram, Sarah B. Robinson, G. D. Ruddell, Janet S. Turner, J. B. Van Houten.

Dept. 101, Virginia L. Main, Rosa R. Zatarian; Dept. 115, L. J. Williams Jr., Phyllis H. Young; Dept. 117, A. K. Van Nest; Dept. 129, D. J. Richard; Dept. 137, E. A. Wimp; Dept. 140, R. C. Hobbs, H. J. Quick; Dept. 142, F. J. Sholtis, Donald Varchol; Dept. 143, D. R. Moon; Dept. 144, Delores J. Paplow; Dept. 145, Quayle Johnson; Dept. 146, L. D. Jacobs; Dept. 148, F. A. Grand, T. J. Simmons.

Dept. 160, E. J. Ammons, S. A. Bunell, L. S. D'Amico, L. P. Smith, L. T. Warne; Dept. 170, D. G. Jamieson; Dept. 180, Thomas Kerwin; Dept. 192-1, E. E. Briscoe; Dept. 206, J. P. Schoeder; Dept. 215, A. B. Guassac, Grace C. Nilsson, B. M. Patterson, C. W. Thompson; Dept. 400, W. C. Foley, Charles Lea; Dept. 401, G. R. Anderson, Verna S. Iverson, Claire Revier, Daniel Rios, R. E. Senn.

GD/ELECTRONICS
Ten-year: Dept. 2, D. L. Zimmerman; Dept. 5, Maxine F. Leeds.

Personal

CONVAIR
To our many friends at Convair, our heartfelt appreciation and gratitude for your messages of cheer, encouragement and generosity toward me and my family while I am confined in the hospital. Bless all of you.

J. L. "Red" Flickinger and family, Dept. 146.

The thoughtful expressions of kindness and sympathy by all of my Convair friends at the loss of my son, Charles Licht, are deeply appreciated.

Elnora March, Dept. 44.

We deeply appreciate the kind expressions of sympathy and generosity of Convair friends in the loss of our father.

Mario J. Lattuca and family, GD/Electronics.

We would like to express our appreciation for the flowers and the memorial fund, which will go for a colored glass church window, from Convair associates in connection with the passing of Donnie Wade Hamlin (Dept. 119), Sept. 2.

Mae and Gene Ruffner and the Hamlin family.

Deaths

CONVAIR
JOHNSON—Edwin, Dept. 217. Died Sept. 24. Survived by wife, Gertrude L., three brothers, two sisters.

Broker's Office Open for Meet

Operation of a stock broker's office will be shown GD/Convair people nearing retirement at a special session tomorrow night (Oct. 12).

The downtown office of Paine, Webber, Jackson & Curtis, 1145 Fourth St., will be opened to men and women in the company's pre-retirement program. Tom Cunningham, manager, will explain stocks, bonds, mutual funds and how market fluctuations are marked on the exchange board.

All intending to be at the meeting are asked to be there at 7:30 p.m.

Notices have been sent to 225 in the program, but anyone else interested may contact Anne King in employee services at ext. 1705, Plant 1.

Regular weekly counseling sessions continue Mondays at 7:30 p.m. in the Convair cafeteria executive dining room. Financial problems will be the subject of next Monday's meeting. The following week will be the first in a series of three social security meetings.

Ir. Achievers Still Can Join

Sons and daughters of GD/Convair people still can enter the Junior Achievement program in San Diego groups, if they sign within the next week.

J. A. Glibe (Dept. 249), JA chairman for the General Dynamics/Convair Management Club, said that application forms will be at Plant 1 employee services for the next few days. All young people between the ages of 15 and 19 are eligible to participate in the business training program.

The Management Club-sponsored group of 19 had its first meeting this week. A product and name will be chosen during this month.

Directing the GD/Convair Junior Achievement group are W. T. Toon, committee chairman; H. G. Barnes, A. J. Krumweide, and John Woodhead, advisers.

Field Service Reps Fan Out With 880s

(Continued from Page 1)

Detwiler has returned to Oklahoma City, base of Federal Aviation Agency's 880-M, after 880 training at San Diego. He is assisted presently by Glen Arner until Arner's return for 990 training. Arner is now in Atlantic City with the FAA 880-M for slush tests.

John Crenshaw, who has been at Dallas on special assignment, has returned to the GD/Convair plant.

Stationed abroad are Phil Smith and Harry Addis with Civil Air Transport in Formosa; Jerry Dugan, Court Zeiss and Vic Korski at Tokyo with Japan Air Lines; George Pohlman and Ralph Avila in Caracas, Venezuela with Viasa which took delivery on its second 880-M the end of September. Frank Laffoon, Mart Addis and Ed Buckman are with Swissair at Zurich, Switzerland.

Saturday Dates Set for Salvage

Schedule for salvage yards at GD/Convair and GD/Astro for the next four Saturdays is: GD/Convair—Oct. 14 and 28. GD/Astro—Oct. 21 and Nov. 4.

Alkazin Heads Contracts and Planning To Round Out Staff of Gen. Manager

(Continued from Page 1)

Recent appointments in the newly-formed communication department (Dept. 16), reporting to Gottschall, are: H. L. Montgomery, chief of community relations and arrangements; J. A. Fergus, chief of editorial; P. J. Fitzgerald, chief of art; H. B. Day, chief of graphic reproduction; D. H. Otto, chief of photography.

Reporting to H. C. Chambers, director of marketing, is H. J. Richardson as assistant director. Martin, as head of quality con-

trol and production flight (now Dept. 48), is in charge of inspection, directed by G. A. Covington; quality assurance under R. H. Gilliland; and production flight under W. B. Harwell.

Engineering functions reporting to Simons are headed by J. S. Bergstrom, assistant chief engineer; R. R. Hoover, chief commercial programs engineer; L. E. Ottem, chief military programs engineer; W. T. Dorrance, chief aerospace systems engineer; H. P. Williams, chief new products design engineer; M. C. Curtis, chief administrative engineer; F. A. Stephenson, chief technical engineer; E. D. Shannon, manager of flight test; O. W. Harper, manager of customer service.

In other recent appointments J. J. Ireland was named chief of systems and procedures, reporting to I. D. Sykes. Systems and procedures has been transferred from data processing and computer systems department and placed directly under manager of planning.

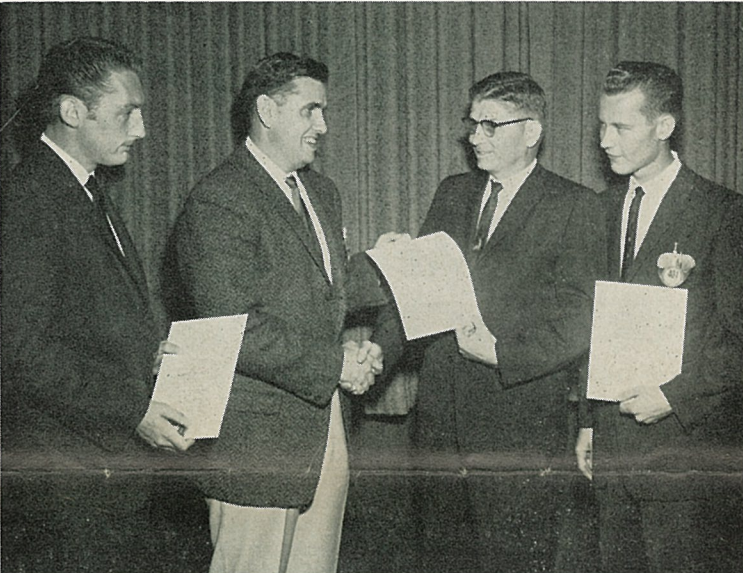
Bruce L. Dobler was appointed industrial relations administrator-engineering, reporting to Wilkens, director of industrial relations. Dobler replaces Curtis.

BEN KIEGLE DIES; CONVAIR PIONEER

Benjamin F. Kiegle, one of GD/Convair's pioneers, died Oct. 7 in his San Diego home.

He was born in Buffalo, N. Y., and started to work for Consolidated there Feb. 2, 1925. He moved with the company to San Diego in 1935. He retired in February of 1960 shortly after completing 35 years service.

Surviving are his wife, Ellen M.; a son, Benjamin R. Kiegle; sister, Florence Johnson of New York; and three brothers, Fred, James and Edward Sheridan.



MORE GRADUATES—W. P. Woods, chief tool engineer (second from right), hands out journeymen certificates to latest graduates from GD/Convair's four-year apprenticeship program, (from left), David Noe, plaster pattern maker; Frederick Simeth and Marvin Bauman, both tool and die makers.

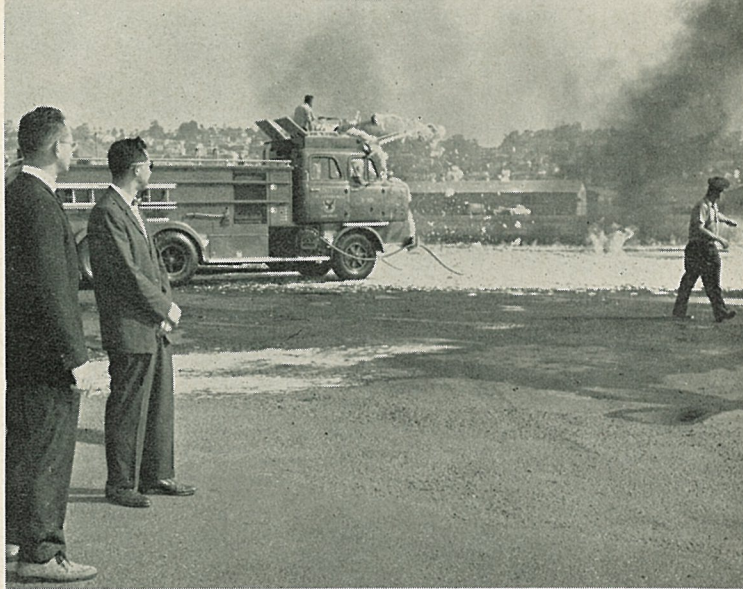
Fire Depts. From San Diego Area Will Watch GD/Convair in Action

Firemen of General Dynamics/Convair this Saturday, Oct. 14, will be dashing into rolling flames to show how they can rescue a pilot from a burning cockpit in less than 30 seconds.

Forty fire departments located in San Diego City and County, area military installations, and local industries have been invited to the crash fire fighting and demonstration as a climax to Fire Prevention Week observance. It will be held at 11:45 a.m. at compass rose.

The demonstration has been scheduled to coincide with the finish of the parade Saturday morning which will see all local fire departments wheeling down Broadway. From the foot of Broadway they will make their way to the GD/Convair site at the north end of Lindbergh Field.

GD/Convair's fire department is responsible for controlling aircraft fires at the San Diego airport, explained Chief D. D. Dimmitt, and has men on duty 24 hours a day. Thus, one of the department's prime responsibilities is to train constantly for emergency crashes and rescue operations, he said.



QUICK RESCUE—Capt. D. L. Keller and Capt. Dewey K. K. Lowe, AF officers based at GD/Convair, watch rescue operation such as GD/Convair's fire department will put on this Saturday for fellow departments in area.

General Dynamics NEWS

Successor to "Convairity," West Coast and Texas editions of the NEWS are published bi-weekly by General Dynamics with editorial headquarters at San Diego 12, Calif., P.O. Box 1950, Telephone CYpress 6-6611, ext. 1071, Logan Jenkins, editor-in-chief.

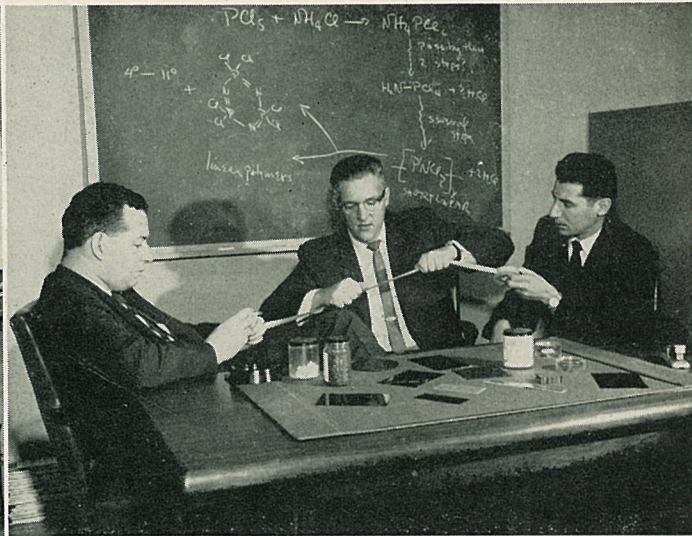
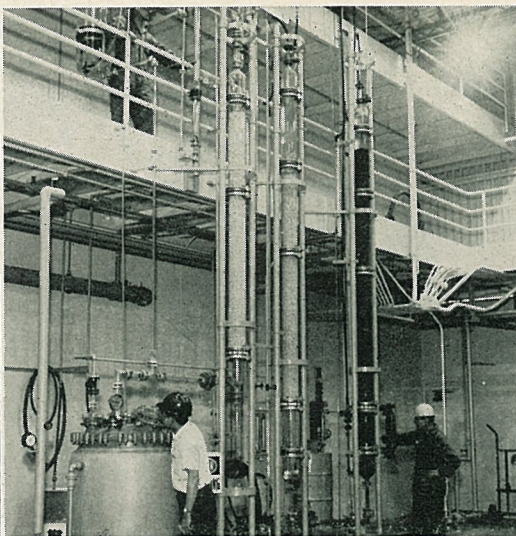
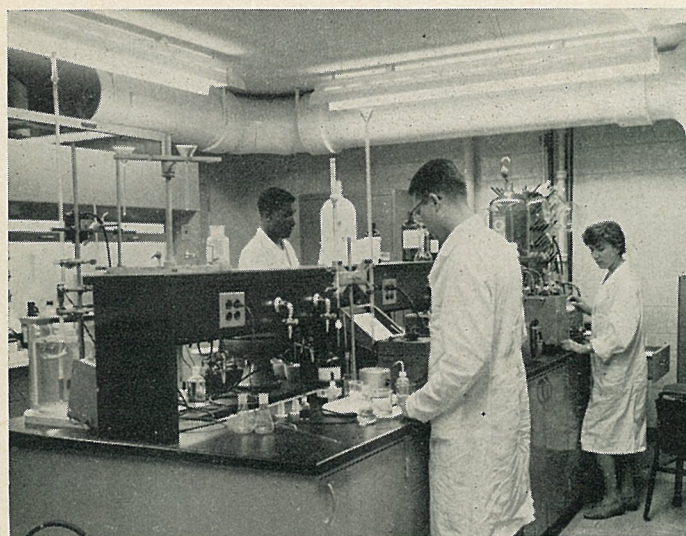
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CHEMICALS CAPABILITY—New, modern pilot plant at San Diego seaplane ramp is home of Chemicals Section of General Dynamics Advanced Products Department, formerly known as "Project X." At left in analytical research and quality control area are Thurman Gillis, Roy Norman, Dusa Cvjetkovic. Center photo shows Don

Oncale (on catwalk), Sergio Cabinum and Ray Kingman. At right are Dr. Lloyd Kaplan, chief of chemical research and development; Dr. Rip G. Rice, technical director of section; and Leo Zuckerman, chief of chemical engineering and production.

Market Development Stage Approaching For GD's 'Project X'

A hitherto unpublicized chemical research program, known for two years only as "Convair Project X" and now organized as the Chemicals Section of the Advanced Products Department of General Dynamics, has reached the market development stage.

The program has been kept "under wraps" for some 2½ years because this chemical discovery was capable of being patented and time was needed to protect GD's proprietary position and file the necessary patent applications both domestically and abroad.

Only recently grouped directly into GD's Advanced Products Department, the project was given a sharp spur forward earlier this year when most of the personnel were moved into a new and versatile chemical pilot plant located at the GD/Convair SD ramp.

The Chemicals Section was born when a chemical reaction was discovered by which a variety of resinous chemical intermediates could be developed having high-temperature properties up to 1,000 F.

Says Dr. Rip G. Rice, who along with Robert L. Riley, was investigating chemistry dealing with the high-temperature materials at the time:

"As is the case with so many chemical discoveries, the reaction came about almost accidentally. A particular chemical raw material had been known for years, but was something of a laboratory curiosity. We discovered this interesting compound could be reacted to produce new chemicals with exceptional high-temperature properties."

Both of the co-discoverers are still in the GD family. Rice is technical director of the Chemicals Section of Advanced Products Department and Riley is continuing his work at the Scientific Research Laboratory.

"AP-Resin-XHU, formerly called Formula X, a light, powdery solid, is one of the intermediates developed from the chemical reaction," explains Dr. Rice. "It was a completely new discovery with commercially feasible applications."

In May of 1959, Rice and five associates moved into a special laboratory facility at 3462 Hancock St. in San Diego. By the end of the year they had developed a 20-gallon synthesis of AP-Resin-XHU.

Reservists on Duty In Northern Africa

Two General Dynamics/Fort Worth men have been assigned to Port Lyautey, Morocco, in North Africa on a 14-day training cruise for U. S. Naval Air Reserve Transport Squadron 703.

They are Harold P. Cowan, Dept. 6-7, and Ruben Ramirez, Dept. 21-7. The squadron's mission will be to airlift passengers, mail and cargo throughout northern Africa and southern France.

Product development of AP-Resin-XHU with its high-temperature applications was pursued with the following results: as a solid it was made into coatings such as varnish; it was molded under high temperatures; it was impregnated on fiber reinforcements and made into laminates.

The chemical was blended with other high-temperature resins to make structural adhesives, electrical insulations and flexible and rigid foams.

Now in their new pilot plant at the SD ramp, Dr. Rice and his group (now numbering some 24 persons) will be able to produce enough of the resin to make marketing operations feasible.

Dr. Rice expects to have two products on the market by the end of the year in addition to AP-Resin-XHU.

One will be "DYNALAK HU" which is a high-temperature varnish, primarily intended as a dip-coating for electronic components, but which also has other minor applications.

Another product, now termed "Vartex T-1092," a class F electrical insulation tape, will be marketed by the New Jersey Wood Finishing Co., Woodbridge, N. J., for wrapping parts of electrical motors to protect against corrosion, provide insulation and cut through resistance while operating at high temperatures.

Timewise, AP-Resin-XHU has been moving rapidly through the research and development stages. In the chemical laboratory a rule of thumb is "seven years from test tube to tank car," a cycle which may be shortened considerably in the present instance.

Dr. Rice points out that the new pilot plant (1,500 sq. ft.) provides a link between information and production. In the versatile facility, GD chemists and chemical engineers will be able to perform almost any known chemical unit process on a pilot scale.

In addition to GD research and development, outside chemical contract tasks will be actively sought for the modern pilot plant and its personnel.

The Chemicals Section, under Dr. Rice, is divided into four functions. Dr. Lloyd Kaplan directs chemical research and development, which includes five chemists and two technicians; product research and development is staffed by two senior chemists and two technicians; chemical engineering and production under Leo Zuckerman includes two chemical engineers, a foreman and several chemical operators. A market development group is under the direction of Dr. Thomas F. Banigan.

In addition to the Chemicals Section, Advanced Products Department encompasses a Mechanical Section, formerly known as Dynapak. R. G. Monsees is general manager of the department.

Two New Successes Scored by Atlas E

CAPE CANAVERAL — Air Force and GD/Astro crews have scored two new successes with recent Atlas "E" series launches over the Atlantic Missile Range.

On Oct. 2, Atlas 25-E completed a programed 4,000-mile flight from Complex 11 here, while Oct. 4 saw Atlas 30-E, launched from Complex 13 follow a 9,000-mile flight path ending "on target" in the Indian Ocean.

Gen. Keeling to Speak To AFPRO Management

Next meeting of GD/Astronautics Air Force Plant Representative's Office (AFPRO) Management Club will be held Oct. 24 at the Marine Corps Recruit Depot Officers' Club, San Diego.

Guest speaker will be Brig. Gen. Gerald F. Keeling, Western Contract Management Region commander, who will discuss management of the Atlas missile and space programs.

Karel J. Bossart, GD/Astronautics technical director, addressed the club's September meeting. At that time, Charles Dvoracek of the AFPRO site activation division received the club's "Man-of-the-Month" award.

GD/FW Men Go To Active Duty

Fifty-one General Dynamics/Fort Worth employees are members of the recently activated 49th Armored Division.

The division is due to report to Fort Polk, near Leesville, La. about Oct. 15.

Employees, by department number, are:
Dept. 3-5, Charles D. Curry; Dept. 4, J. W. Jordan, J. V. McDonald, W. H. Moore.
Dept. 6, J. L. Baker, O. G. Burton, H. W. Coppinger, C. D. Gaddy, F. L. Harrison, G. H. Hayward Jr., B. O. McCauley, J. B. McGowan, T. J. Osborne, G. G. Pearcey, Calvin Post oak, J. W. Powell, J. L. Shen, D. R. Shirley, G. W. Wilson.
Dept. 14, P. K. Dorsey; Dept. 19, R. J. Ballard, J. L. Baldrige, G. W. Volkman Jr.
Dept. 20, L. W. Herring; Dept. 21, B. R. Burnett; Dept. 22, M. E. Byars, D. L. Little, J. E. Williamson.
Dept. 24, J. L. Tillery; Dept. 27, E. E. Farmer; Dept. 32, H. J. Harner.
Dept. 35, G. L. Botkin, L. M. Browder, J. W. Doty, A. W. Hovis, L. R. Leach, W. H. Long, R. W. Trimble; Dept. 37, W. H. Sellers.
Dept. 64, C. M. Sheldon, R. K. Treu, B. V. Whitehead; Dept. 65, Thurman Cannon; Dept. 75, K. D. Chaney.
Dept. 81, B. T. Cantwell, E. H. Draper, Noel McNeil, T. L. Neely, C. M. Peters Jr.
Dept. 82, R. L. Jones Jr.; Dept. 85, B. E. Weatherby.

Erickson to Speak For IAS Section

B. A. Erickson, chief of projects, General Dynamics/Fort Worth, will speak Friday before the Texas Section, Institute of Aerospace Sciences, Inc., in Ridglea Bowl Restaurant.

He will talk on "Aviation: Yesterday, Today, Tomorrow and Beyond." GD/FW will host a social hour starting at 7 p.m. Erickson's talk will follow an 8 p.m. dinner.

Two GD/FW men are officers in the section. V. G. Polovkas is vice-chairman and J. D. Barnard is treasurer. Both are in Dept. 6.

Dynamics Ind. Relations Staff Members Named



J. L. Budros J. S. Derby G. A. Lewis G. D. Higgins

(News stories, similar to the following, reporting organizational alignments in other corporate departments, will be carried in subsequent issues of General Dynamics NEWS.)

Staff appointments, including the new position of director of labor relations, were announced this week by R. H. Biron, senior vice president-industrial relations.

Assignments, some of them new in title only, include J. L. Budros as director of personnel administration; J. S. Derby as director of labor relations; G. D. Higgins as director of industrial security; G. A. Lewis as director of organization and compensation.

Reporting to Lewis are E. C. McManus as manager of employee benefits; G. C. Spencer as manager of wage and salary administration; and A. C. Crum, executive assistant.

Reporting to Budros are C. M. Barlow, personnel manager (New York); H. T. Brooks, manager of personnel placement; R. B. Craig, manager of personnel services; and R. I. Morse, manager of office services (San Diego).

All have been with General Dynamics for a matter of years except Derby, who joined last month after four years in a similar position for Alco Products, Inc., Schenectady, N. Y. Previously he was director of industrial relations for Baldwin Lima Hamilton Co. Born in Lawrence, Mass., he holds degrees from Villanova University.

Budros has been with the company since 1942, joining at San Diego as safety engineer. He held other industrial relations posts before transferring to Fort Worth in 1948 to head the safety office and later the labor relations section. In 1953 he became personnel manager and in 1960 was moved to Biron's staff in San Diego. He graduated from San Jose State College and did graduate work at Stanford.

Higgins, educated at UCLA, is a veteran of Vultee Field and Stinson divisions (chief of industrial relations) and transferred to Fort Worth in 1948 as assistant industrial relations manager. He was named manager of industrial security for the division in 1951 and in late 1952 was transferred to Biron's staff as director of industrial security for the then Convair divisions.

Lewis, a Portland, Ore. native, took his degree at University of California in mathematics and economics and joined Vultee Field in 1942, transferring to San Diego in 1944. He has been assistant

to Biron, specializing in organization and compensation, for more than ten years.

McManus was born in Kingston, N. Y. and took his degree at Holy Cross. Following Army service (1941-1947 in Quartermasters' Corps overseas and in Washington, D. C., a major) he took his master's degree in business administration at Harvard. He was with Philco Corp. and Ford Motor Co. before joining General Dynamics in 1956 in personnel services.

Spencer, a native of Greenville, N. J., was educated in San Diego, and at UCLA specialized in labor legislation and personnel management. He joined Convair in 1939 in shop departments, later transferring to industrial relations in wage and salary posts. He headed wage and salary for Pomona Division for a number of years before transferring to General Office in 1956.

Crum, from Marshall County, Ind., is a graduate of Western Michigan College at Kalamazoo and was with Michigan Bell Telephone before joining the Air Corps in 1940. After a period in Convair personnel office at San Diego he was recalled by the Air Corps and served until release as a captain in 1945. Returning to Convair industrial relations he transferred to General Office in 1950.

Barlow has been with General Dynamics since 1956 as coordinator of educational programs. Before that he was with Union Carbide Co. for 14 years, latterly as college recruiting coordinator. A Yale University graduate with a master's from Columbia, Barlow has administered various corporation recruitment, training and financial aid programs.

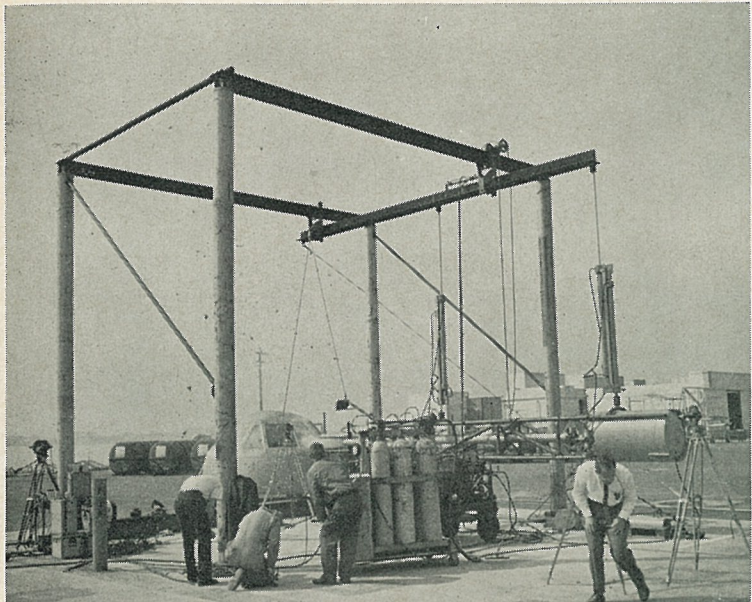
Brooks, born in Chicago and educated at University of Michigan, joined the company at San Diego in 1945 in industrial relations. By 1948 he was engineering personnel administrator and later in charge of executive de-

(Continued on Page 4)

Veterans of Vultee To Meet Oct. 21-22

Vultee Field veterans from throughout the country will gather at Town and Country Hotel Oct. 21-22 for the group's 14th annual reunion.

Wes Magnuson, GD/Astro, heading the arrangements committee, said a full round of events, including a luau dinner and a fashion show for wives, has been planned.



IMPACT!—Jerry Green, Earl Moore, Lyle Minkler, Bob Koser scatter for cover during impact tests on CL-44 windshield at San Diego testing site to prove resistance to flying objects.

Dummies' Shirts Remain 'Clean' In CL-44 Windshield Checkouts

Two sister divisions of General Dynamics Corporation have joined forces in developing design for the safest cockpit windshield they can evolve.

A Canadair Limited CL-44 cockpit has just finished punishment in GD/Convair's structures test lab in a series of impact checkouts. The windshield, made by Libby-Owens-Ford to original Canadair-Convair specifications,

showed it could stand up under direct hits from flying objects without shattering on the pilots.

"The windshield is a 'double-decker,'" explained L. F. Minkler, Dept. 68 test engineer on the project. "It is made of three layers of glass with vinyl in between. It has a built-in defrosting system with electric conductive coating between the vinyl and glass."

Tests, completed the first of this month, were follow-on to a series which stretched over three months last summer at the San Diego ramp test site. At that time the cockpit was tested for impact resistance in the pilots' area with the windshield heated to 100 degrees F. Speed simulated approximately 320 miles per hour, cruise velocity of the turboprop transport at sea level.

Dummy styrofoam pilots within the cockpit, dressed in white shirts, received only a sprinkling of small glass chips (known as "spalling") which would not be hazardous to a human, said Minkler.

Besides the white shirts, which are marked with black from carbon paint beneath whenever hit by glass, dummies wear safety glasses with one lens in and one out. This shows what damage, if any, glass particles would do to pilots' eyes, with or without glasses.

This year's final test was a "cold shoot." The windshield was chilled to 20-30 degrees F. by passing gaseous carbon dioxide over it within an enclosed chamber. It "soaked" for an hour in the chilly temperature before shooting began.

Minkler, who had charge of the testing under A. R. Vollmecke, assistant group engineer, said that a cold windshield is much more likely to shatter than when heated. Warm vinyl stretches to "give" when hit by an object.

However, final testing showed dummies' shirts unmarked by flying fragments to give the windshield design a clear slate.

GD/Astro Engineers To Present Papers For Stress Society

Two senior research engineers from General Dynamics/Astronautics will give papers at tomorrow's (Oct. 12) meeting of the Southwest Chapter of the Society for Experimental Stress Analysis in Los Angeles.

J. L. Christian will talk on "Properties of Aerospace Vehicle Materials at Cryogenic Temperatures," and C. K. Perkins' speech is titled, "Effect of Zero-Gravity on Cryogenic Liquids."

Other General Dynamics men attending the meeting will be C. R. Smith, A. R. Vollmecke, and G. D. Lindeneau of GD/Convair structures lab. Smith is Southwest section program chairman and Vollmecke and Lindeneau are members of the planning committee.

Fifty Enter Pilot Program In Business Systems Mgt.

Fifty forward-looking General Dynamics/Convair persons have entered the pilot "Business Systems Management" program, called the first of its kind sponsored by a West Coast company.

Designed to keep abreast of the constantly-increasing technical advances in today's "computer revolution," and to expand knowledge of all persons handling facets of the company's business systems, the course is offered through cooperation with Cal-Western University.

"There is a very definite need of such a training program, especially with the giant strides in electronic computing systems—which now automatically process data into information necessary for successful operation of any large company," W. E. Newton, GD/Convair educational services coordinator, said.

"Optimum business systems refinement and efficient utilization of electronic data processing systems, no matter how advanced, depend upon the human element."

The certificate program requires 42-semester units of college-level work, with classes held at Cal-Western, GD/Convair and San Diego City College in the evenings. It is open to all eligible General Dynamics computer programmer or business systems personnel in San Diego.

Enrollment is open now for the second semester beginning Feb-

ruary. Applications of eligible flat-salaried persons are accepted by Newton, ext. 2166, or R. H. Nall, educational services, ext. 2568, both GD/Convair, Plant 1.

Dynamics Ind. Rel. Staff Appointed

(Continued from Page 3)

velopment. Prior to joining Convair he was management consultant and personnel manager for mid-Western companies.

Craig joined at Fort Worth first in 1946. He left the company for a period, returning in 1948 as instructor in educational services and by 1951 was educational services supervisor. He became wage and salary administrator in 1953 and held this post before being transferred to San Diego this summer. He attended Texas A & M and served in the U.S. Army.

Morse, born in Bellingham, Wash., attended Carleton College in Northfield, Minn., and joined Consolidated in 1936. He held various factory supervisory posts and in 1943 was assistant division manager at New Orleans. He later held a number of posts in material and purchasing and served a three year period as district expediting supervisor in Newark, N. J. He has been manager of office services at San Diego since 1957.

Family Piles Up Century at GD

A total 94 years' service at General Dynamics divisions was recorded recently by one family when D. Paul Bender, GD/Astro field engineering supervisor (Dept. 324) received his 20-year pin.

His father, Homer M. Bender, is employed at GD/Electronics, while three brothers are long-time GD/Convair employees.

The senior Bender lists 12 years with the company, with 11 at GD/Convair before transferring to GD/Electronics Dept. 7 last year.

Wade M. Bender, GD/Convair Dept. 137, has 21 years' service; Homer B. lists 22 years and is in Dept. 123; while Frank S., Dept. 31, is a veteran of 19-years' standing. All are assistant foremen.

Paul is the "best-traveled" of the group. Like the rest of the family, he started at GD/Convair; spent two years at GD/Fort Worth; another year at GD/Convair; three years at GD/Pomona; and reported to GD/Astronautics in 1956.

An even dozen youngsters call the senior Bender "grandfather" now. Paul has three children, Wade three, Homer has four, and Frank two.

"The families always get together at Christmas," Paul remarked. "As you'd expect, there's a lot of lively conversation, with five of us 'talking shop.'"



ARTIST—Jim House, GD/FW engineering supervisor, substitutes acetylene torch and scrap steel for paint and canvas.

Novelty

Sculptor Uses Welding Torch

Jim House, General Dynamics/Fort Worth engineering supervisor, substitutes an acetylene welding torch and scrap steel for the usual tools of an artist—and wins prizes at art exhibitions.

House is a sculptor in steel in his spare time.

Working in a completely equipped "studio" at his Lake Worth home, House first began cutting art forms from scrap steel only two years ago.

One of his first efforts, which he dubbed "Street Fighter," took second place in statewide competition of the Texas Fine Arts Association the same year.

House "sculpts in steel" without the aid of preliminary sketching or drafting. His works vary from abstract pieces to easily recognizable figurines in a Western theme: a cowboy with lariat, or a steer rider.

House concentrates on form and balance rather than symbolism. He says he works "just from feel." Most of his figurines are about two feet tall, weighing an average of from eight to 10 pounds each. He works with steel varying from one-fourth-inch rod to one-half-inch plate.

House's main tools are his torch, saws, hammers, pliers, drills, buffers, grinders.



WHAT'S THAT NAME?—Guards C. K. Hancock and D. T. Baldwin do "double take" as father and four sons enter plant. Homer M. Bender, GD/Electronics, Dept. 7, leads parade, followed by sons, Homer B., GD/Convair Dept. 123; Wade M., Dept. 137; D. Paul, GD/Astro Dept. 324, and Frank S., GD/Convair Dept. 31.

Engine Blasts From Convair Jet Transports Bounce Off New-Type Steel Deflectors

Jet engine blasts of Convair jet transports are bouncing off strong steel backboards, installed at two field operations locations at General Dynamics/Convair this summer.

The 120-ft.-long steel blast deflectors replace wooden fences which had served as blast walls throughout the propeller transport era at the San Diego plant. R. E. Dennington of GD/Convair facilities engineering said that the wooden structures couldn't stand up to full force of jet engine blasts, and, in time, might prove dangerous if they broke up during engine test runs.

Enough steel panels, 2½-feet wide and 12-feet high, were ordered in early summer from Special Products Division of Sreemco, Chicago, Ill., to construct solid blast deflectors for four Convair jet 880s or 990s. Single sections stretch along north side of pits 1A and 1B and a back-to-back wall at pits 10 and 11. They can withstand 150 lbs. of pressure per square foot.

When they arrived at the plant they were solid steel, except for two rows of holes drilled along the lower edge. These holes vent the back side of the wall and prevent a back pressure from forming which would cause uplifting of the fence.

However, Dennington said that trials showed that extreme blast forces might eventually warp the steel. So, to relieve the pressure,

geometric patterns of 3-in. half circles were punched (burned by torch first, then hammered back) in direct path of engine blasts.

"By bending back lips of the half-circles, direct pressure blast on the wall is reduced and exhaust gases are still deflected upward," explained Dennington. "Result of the rework was apparent in reduction of excessive wall deflection and vibration."

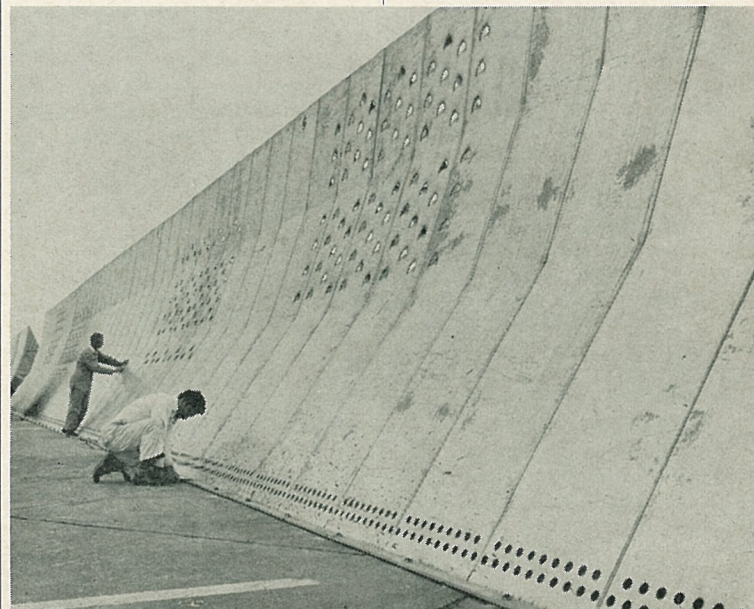
All sections are bolted solidly together—panel to panel—then into concrete foundation and to steel frames and supports erected by plant engineering.

Hustler 'Cover Girl' For AF's Journal

A B-58 Hustler is "cover girl" for October's "The Airman," official journal of the Air Force.

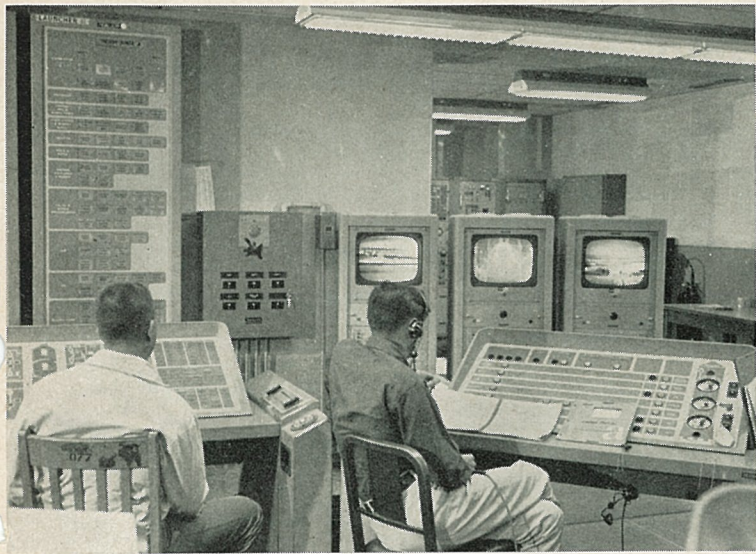
And the record-breaking feats of 43rd Bomb Wing crewmen in B-58s are chronicled in some detail in Dave Karten's full-length feature article, "Hustler."

"Until the . . . B-70 bomber becomes operational, the B-58 will remain the USAF's only supersonic bomber," the article says. "It is a reliable, effective weapon system manned by some of the world's most experienced airmen—a powerful deterrent to armed aggression."



Save Material — Don't Throw Your Job Away!

STRONG BARRIER—E. E. Quick and Don Herrera, both of Dept. 171 at GD/Convair, tighten bolts in recently-installed steel blast deflectors at field operations pits. Notice pattern of half-circles punched in direct path of engine blasts to relieve force on walls.



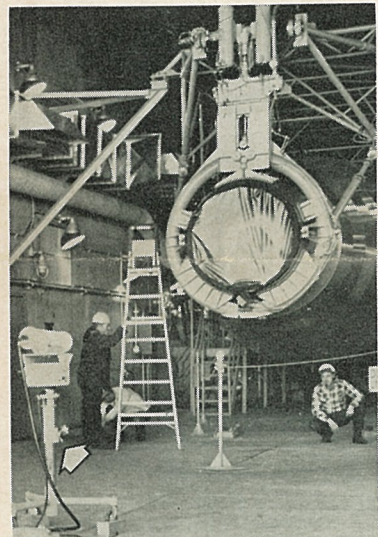
EXTRA EYES—Television monitors positioned within Atlas launch operations building give missile crew close-up views of all phases of test operations.

Atlas Launch Areas Scanned By TV to Keep Eye on Activity

Meters and gauges are invaluable for elaborate missile tests and operations, but for real "believing," "seeing" is still one of the missileman's most reliable guides.

Since early last year, General Dynamics/Astronautics motion pictures and television (Dept. 124) has provided missile crews with "extra eyes" by setting up portable closed-circuit television units at Atlas ICBM sites throughout the country.

Although installations vary,



IN PLACE—Television camera (arrow) is set up in "coffin" launch complex as GD/Astro crew readies missile.

GD/Astro crews usually mount one camera permanently, and lay some 1,100 feet of camera, utility and lighting cable at each site. Other cameras may be shifted from complex to complex as required.

Teams of GD/Astro television specialists, all reporting to L. E. Steadman, television supervisor at San Diego, are on the job at Fairchild AFB, Wash., Warren AFB, Wyo., and Schilling AFB, Kan.

During fueling, crew procedures training and other tests, three to four cameras with special lighting units located throughout the launching area are focused on the missile and its associated equipment.

What the cameras "see" is displayed on three television monitors inside the launch operations building (LOB).

"Using remote control units, crewmen in the LOB can 'pan' and 'tilt' cameras as desired to scan the entire launch area," Steadman explained.

On several occasions, problems have been avoided because television helped crews spot faulty connections, leaks and other malfunctions in time to permit corrective action.

The 18 mobile units installed at Atlas "E" series complexes to date have proven so successful that television soon will become a permanent feature of all Atlas sites in this series.

GD/Astro will provide technical coordination and direction.

General Dynamics Specialists Speak at International Seminar

Two General Dynamics Corporation specialists will be among United States representatives at an international seminar in England this week.

Invited to give papers at the Technical Seminar on Infrared Guidance Techniques at Malvern, England, Oct. 9-13, are Romuald Anthony of General Dynamics/Convair and L. A. Jeffries of General Dynamics/Pomona.



Rom Anthony

They are two of 27 outstanding military and industry experts chosen by the Department of Defense, Research and Engineering Division, Washington, D. C., to represent this country. The Malvern meeting, on the site of the Royal Radar Establishment, is sponsored jointly by United Kingdom, Canada, and United States for exchange of technical information on infrared guidance development, and related fields.

Anthony, who heads infrared and optics activities at GD/Convair, will speak on "Observation of Infrared Horizon Gradients with Application to Orbiting Vehicles." In part, his paper deals with research at GD/Convair

under the vertical rocket probe program for the Air Force.

"A Sandwich-Type Detector for Negative Contract Operations," is title of Jeffries' paper. G. W. Ashley was co-author. Jeffries is assistant supervisor of the GD/Pomona physics and infrared group. He was a former research assistant with Atomic Energy Commission's Ames Laboratory.

Anthony, who joined Convair in 1958, was a key figure in the first high-altitude solar research in the infrared in 1948 at Naval Ordnance Test Station, China Lake, Calif.



'Hand-Me-Down'

Construction of First Delta, '7002' Okayed in '46 on Low Budget Level

(Following is installment No. 69 in a continuing history of General Dynamics products of past.)

The only indicated disadvantage (of the delta wing) was poor lift/drag ratio at low speeds, and the Air Force in November, 1946, approved construction of a full-scale, 60-degree, delta-winged research craft with standard jet power plant, for evaluating the configuration.

To conserve research funds, the contract specified completion "in the shortest possible time, using available materials. No attempt shall be made to meet existing specifications . . . and existing parts from other airplanes shall be used where possible." (Engineers managed to work into the design the main landing gear from a JF-1, nose gear from a P-63, pilot's ejection seat from a YP-81, and other hand-me-downs.)

The model was designated 7002 (which happened to be the accounting department's work order number). After flight tests and acceptance, the Air Force called it XF-92A to distinguish it from the -92 ramjet project. The design evolved as a midwing monoplane with the engine air intake in the nose. The wing extended almost the length of the fuselage, requiring a radical change from conventional tail configurations. A triangle-shaped vertical fin was mounted, with rudder in the trailing edge. Functions of ailerons and elevators were combined in "elevons" set into the wing trailing edge.

Construction was well along when Vultee Field was closed in the summer of 1947, and the plane was completed less engine that fall at San Diego. In December it was shipped by Navy cargo vessel to San Francisco and trucked to the NACA Ames Aeronautical Laboratory, Moffett Field, for full-scale wind tunnel tests. These verified previous small-scale tests and the 7002 was returned to San Diego (thumbing a ride on the aircraft carrier Boxer).

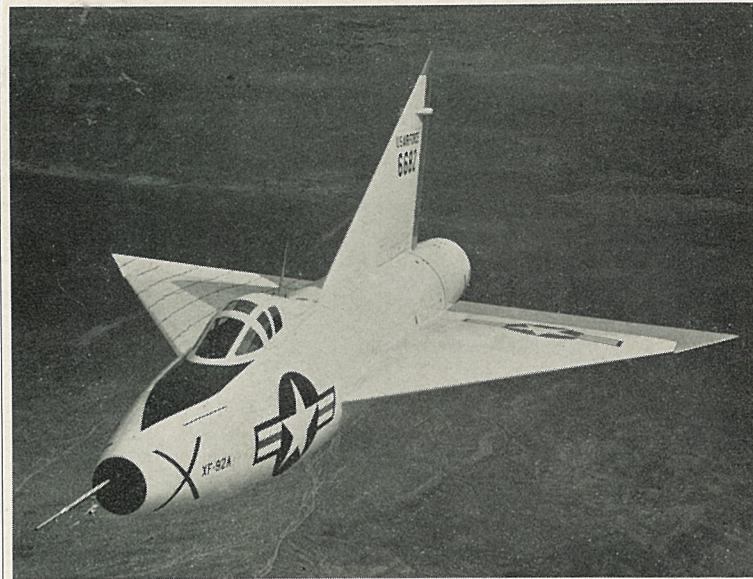
In the post-war decade jet engine improvement seldom materialized as soon as airframe designers hoped. In 1945 it was anticipated that the G.E. I-40 or Pratt & Whitney Nene would offer thrust ratings of 7,000 or 8,000 pounds when 7002 was ready to fly. Instead, she was fitted with an Allison J33-A21 (nominal thrust 4,600 pounds) and taken to Muroc April 1, 1948. The engine lacked power and tests were limited to taxi runs on the 7-mile-long dry lake bed. Then an improved dash-A23 was substituted and the plane flew Sept. 18 with E. D. (Sam) Shannon at the controls. (He reported normal performance, except for lag in hydraulic-system response to stick and rudder signals.)

Up to now the delta torch had been carried by a handful of engineers. The radical configuration evoked little enthusiasm within either the company or the Air Force. As the test program proceeded the plane attracted widening attention. Original plans called for retiring it after 50

hours' company testing. Instead, the Air Force took over with a 30-hour evaluation program of its own, and NACA became interested. After a dash-A29 engine was fitted in May, 1951 (5,300 pounds thrust plus afterburner), the Air Force and NACA continued testing the heavily instrumented plane another year.

Test pilots Capt. Charles Yeager and Maj. Frank K. (Pete) Everest did most of the early flying for the AF. They found

the high performance plane easy to maneuver and land and exceptionally stable in the transonic region around Mach .9. The aircraft lacked power to pass Mach 1 and is known to have flown faster than sound only once—when Yeager flipped it on its back and pulled 4 Gs to put it into a vertical power dive. Yet Convair engineers were satisfied they had found a supersonic configuration. In 1951 they had an opportunity to prove it.



WORLD'S FIRST—This was XF-92A, world's first delta wing aircraft, as it looked on early flights. Eventually it was converted to traveling exhibit.

Engineer Team Bags Contract To Develop Landing Strip Mat

General Dynamics/Convair engineers are designing matting for use in a portable landing strip for Marine fighter craft under a Navy contract received recently.

Awarded by the Naval Air Materiel Center, Philadelphia, Pa., the contract in the amount of \$88,000 is the result of direct sales efforts of a GD/Convair perimeter engineering team headed by C. S. Brandt, chief of product support. It calls specifically for design, fabrication, and testing of SATS (small airfield tactical support) Landing Matting with work to extend over a period of 20 months.

Project leader, G. L. Pankey, and Ladislao Pazmany, both senior design engineers, are responsible for coordination of efforts.

According to Pankey, lightweight materials will be studied and tested for construction of portable panels, about 20 square feet in size. These panels, when laid to form a short landing field 2,000-ft. by 72-ft. wide, must be strong enough to withstand arrested landings and catapult takeoffs of latest-type Marine Corps jet aircraft.

Pankey and Pazmany were aboard the USS Lexington off San Diego coast this summer to study problems in aircraft landings and takeoffs which are similar to those anticipated on portable landing fields. The SATS fields would, to all practical purposes, be land base adaptations of aircraft operations.

The current GD/Convair con-

tract is one of the first of this type to be obtained on a competitive bidding basis, Pankey pointed out, and due entirely to concentrated efforts of perimeter engineering which entered the sales field to push division capabilities early this year.

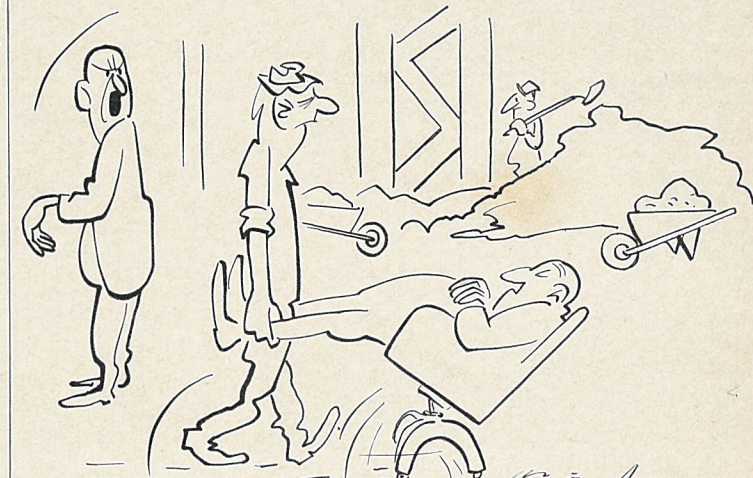


SHIPBOARD STUDY—GD/Convair engineers, Ladislao Pazmany and G. L. Pankey, cruise on USS Lexington to study short landing problems.—U. S. Navy photo.

XF-92A Plane Finds Home at University

XF-92A was the world's first delta wing plane.

Project engineer during the construction windup and long test program was Thomas M. Hemphill. In the summer of 1954 the plane's wings and fin were cut and hinged, to fold for highway travel by truck. It appeared on exhibition at many air shows (was a part of the 1955 Rose Parade at Pasadena) and last year was donated on a permanent basis to University of the South, Swannee, Tenn.



"Olson!"



WINNERS—Prize-winning GD/Convair's Road Runners march behind CRA chuck wagon, turned float, at third Annual Travel-Trailers of America, Border District, trailer rally. Local group won second prize for costuming.

Green Thumbs Plan Show; Roses Highlight Format

Green-thumbed GD/Convair employees will have opportunity to display their prize blooms in the annual Garden Club fall show slated for Oct. 29, E. L. Zimmerman, commissioner, announced.

This year's show will include fall roses, unprecedented in the club's history, Zimmerman said.

Final plans for the event will

be laid tonight (Oct. 11) at a meeting, 7:30 p.m., San Diego Floral Association Bldg., Balboa Park. An Organo representative from the San Diego Fertilizer Co. will talk on the various methods of stimulating growth through fertilization.

Eight divisions of competition, including two children's brackets, will be featured in the one-day exhibition at the Floral Association Bldg. Doors open to the public at 1 p.m.

Chrysanthemums, which have the highest number of classes with 21, are divided into four divisions: one bloom, large or medium; three blooms, large or medium; pompons, three stems; and button mums.

Six classes are earmarked for the arrangement division and three classes for corsages. The children's division will be divided between those in the 5-11 year group and those, 12-16.

Fall roses will compete in six classes; red, yellow, pink, white, orange and mauve.

Entries will be accepted during the day of the show until 11 a.m. Zimmerman warned that under no conditions would entries be taken after the deadline.

Classification sheets and entry rules can be obtained at employee services, Bldg. 32, Plant 1.

Bloodmobile Visits Plant Next Thursday

San Diego's Bloodmobile will be taking donations from the second shift, 5 p.m. to 7:30, Oct. 19, at GD/Convair Plant 1.

All donations go to GD/Convair's blood credit for use by any employee and his immediate family.

Donor cards can be obtained through supervisors. Bloodmobile unit will be set up at Bldg. 32, Plant 1.

Road Runners Win 2nd Prize At Trailer Rally

GD/Convair's Road Runners ran away with second prize in costuming at the third annual Travel-Trailer Clubs of America, Border District, trailer rally Sept. 28-Oct. 1.

Competing against clubs from all California, the local group entered 28 units in the rally held on Del Mar fairgrounds.

Ralph East (Dept. 141-1), club president, led a delegation of over 100 persons dressed in white shirts, white western hats and dark trousers.

Highlighting the three-day festivities was CRA's chuck wagon, turned float in the form of a road runner. Built by club members over three weekends, the "road runner" featured blue and red "feathers" with an electrically-operated, blinking pair of red eyes.

Activities included a potluck dinner, a hobby show, bingo games, and musical entertainment provided by each club.

Keglers Slate Award Banquet

Awards for GD/Convair summer league bowling champs will be presented at the annual banquet Saturday (Oct. 14) at Michael's Restaurant in Lemon Grove, Jim Hayman, CRA commissioner, announced.

The dinner, beginning at 7 p.m., will officially wrap up the summer season. Reservations may be made with Hayman, ext. 1155.

Hunters to Register 'Big Game' In Annual Drawing Contest

Big game hunters from GD/Convair and GD/Astro can begin "drawing a bead" on the prizes for winners of the Gun Club's annual Big Game contest which opened this month and will run through Dec. 12.

Open to all employees and their families, the "hunt" will be climaxed with a drawing at Gillespie Field Dec. 12. Jack Swank, CRA commissioner, and Ezra Johnson, ARA commissioner, urged all hunters to enter their big game "kills" in the drawing.

Successful hunters bagging any type of big game (deer, bear,

FAA Exam Prep

CRA Ground School Course Registration Ends Tonight

Aspiring pilots interested in completing the CRA Solo Flyers' ground school course can still register if they attend tonight's (Oct. 11) lecture at 7:30 p.m., Jim's Flying Service, Lindbergh Field.

CRA Commissioner Ted Sanford said this is the second in a series of 19 weekly Wednesday meetings designed to prepare the student for Federal Aviation Agency's pilot license examination.

Conducted twice yearly, the course is directed by Rex Robinson, GD/Convair engineer. This is the fifth year Robinson has instructed.

Tonight's lecture will complete the initial section on general orientation, physical requirements, students' permits, pre-flight checks and traffic patterns.

After tonight, the next two weeks will cover flight theory. The class will then swing into five weeks of navigation study, followed by radio navigation, meteorology and a month's review before the examination.

The course is free.

All foreign exchange students living with Convair employees or their friends are particularly urged to join the training, Robinson commented. Anyone knowing of such students wishing to take instruction should contact Robinson at ext. 2265, Plant 1.

Four GD Daughters Honored for Service

Four General Dynamics daughters at San Diego were among 36 girls presented at the Harvest Ball at Hotel del Coronado last Saturday night (Oct. 7) in recognition of completion of provisional training at Grossmont Hospital under sponsorship of Grossmont Hospital Woman's Auxiliary.

The girls, all high school seniors, presented as volunteers in community service were: Martha Field, daughter of J. K. Field, GD/Convair chief of employee services; Diana, daughter of C. L. Meador, General Dynamics director of contracts; Victoria, daughter of L. E. Ottem, GD/Convair chief military programs engineer; and Pamela, daughter of Martha Woodberry, secretary to Field and CRA commissioner of women's activities.

Toastmasters Now 'Dynamic'

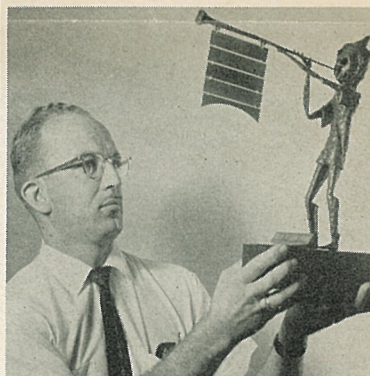
A new name, new meeting date, new slate of officers start the Convair Toastmasters Club 457 on a fresh club term.

The speakers' group has chosen "Dynamic" for its new name to more clearly denote its function, serving all General Dynamics men in the San Diego area.

Meeting nights have been changed to Thursdays with 6 o'clock dinners in the Convair executive dining room on Pacific Hwy.

John Belanich of Astro was installed president at the Sept. 30 Area Five awards banquet in Mission Valley Inn. Other officers, seated by Andrew Gormish (Dept. 6), Area Five governor, are: educational vice president, Charles Willits of Convair; administrative vice president, William Szabo, Astro; treasurer, Fred Stevens, GD/ Electronics; secretary, Ed Wynn, and sergeant at arms, Jim Tucker, both of Astro.

Highlight of the banquet was presentation of "Club of the Year" trophy to Naval Training Center club. Dynamic Toastmasters were runners-up. The imaginative figure of a medieval trumpeter, symbolic of a Toastmaster's "inner soul," was designed by Willits, Convair industrial designer, and executed by Jack Boyd, La Jolla silversmith.



"INNER SOUL"—Andy Gormish (Dept. 6) contemplates "best club" trophy designed to portray Toastmaster's "inner soul."

CRA Basketballers Asked to File Lists

Preparations for the shop league intramural basketball season are in full swing, according to Pete Beyrer, CRA commissioner.

All departments interested in entering a team should file squad lists with employee services or call Beyrer, ext. 1245.

Potential basketballers can reserve Municipal Gym courts for workouts and practice skirmishes after Oct. 15 by calling Earl Smith, BE-9-4421.



CHOW TIME, FUN TIME—Members of GD/Convair's Riding Club are shown in various sequences at Los Caballos camp, Cuyamaca Rancho State Park, where they gathered for an overnight camping and riding excursion, Sept. 30 to Oct. 1. Color

Guard captain Lou Barbour (center) prepares to "chow-down" at evening dinner line. Over 35 riders, 28 on horseback, were on hand for this self-styled "round-up." Event was arranged to honor club's Color Guard.

CRA Calendar

(Convair Recreation Association has some 40 activities in operation. For information on Convair sports, call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

AEROMODELERS—Tri-club meet Oct. 22, Hourglass Field, 8 a.m.-2 p.m.

BOWLING—Awards dinner for summer league winners Oct. 14, 7 p.m., Michael's Restaurant, Lemon Grove. For reservations call Jim Hayman, ext. 1155.

CAMERA CLUB—Meeting Oct. 23, Photo Arts Bldg., Balboa Park, 7:30 p.m. Open house every Sunday in October at Photo Arts Bldg., model shooting and print display.

GARDEN CLUB—Annual Fall Flower show, 1-5 p.m., Oct. 29, Floral Assoc. Bldg. Meeting tonight, 7:30 p.m., Floral Assoc. Bldg.

GUN CLUB—Big Game contest open to all employees. Entry blanks at employee services.

MOVIES—Reduced price movies each Friday, Saturday, Sunday at Adams Theatre, 3325 Adams Ave. Admission: adults, 50c; children under 12 free if accompanied by adult.

RADIO CLUB—Meeting Oct. 12 8 p.m., Harbor Drive Clubhouse.

ROCKHOUNDS—Barbecue dinner, Pecan Park, 6 p.m., Oct. 14. Field trip, Yermo, Oct. 21-22.

SOLO FLYERS—Ground school course, tonight last night for registration, Jim's Flying Service, Lindbergh Field, 7:30 p.m. Call Rex Robinson, ext. 2265.

SPORTS CAR CLUB—Installation dinner, Valle's Restaurant, 2424 5th, Oct. 13, cocktails 6:30. Call Virginia Hurt, BR 3-9357.

SQUARE DANCING—Advanced and intermediate classes Oct. 17, 8 p.m., American Legion Hall, 4061 Fairmount Ave.

WATER SKI CLUB—Skiing at Santa Clara Pt., Oct. 14 and 21, 9 a.m.-1 p.m.

WOMEN'S ACTIVITIES—Tickets on sale to fall fashion show (Oct. 18) at Plant 1 employee services.

Williamson Wins Pistol Tourney

Joe Williamson (Dept. 401-5) swept both master's .22 caliber police course and .45 caliber short national match with scores of 284 and 262 at the Sept. 24 competition.

Close behind Williamson were Carl Hornburg (Dept. 139) and W. G. Walker (Dept. 6) with tallies of 282.

Other winners in competition were Bickar, first in expert class and second in national match; Ralph Benson (wife in Dept. 250), first in sharpshooter and L. L. Richeson (Dept. 128), first in marksman category.

Selected to represent GD/Convair's pistol team at the close of the match were: Hornburg, E. E. Bickar (Dept. 215), Ralph Picard (GD/E 6) and Ash Bishop (Dept. 141-1), club commissioner.

Bishop said choice was based on highest aggregate scores in the past three months.

Installation Dinner Set by Car Clubbers

Sports Car Club enthusiasts will gather Friday (Oct. 13) at Valle's Restaurant on Fifth Ave. for their annual installation dinner.

Members are urged to attend as a demonstration of support for new officers and to thank retiring officers for their efforts during the past year, Gerry Wright, commissioner, said.

Newly-elected officers are: Vern Matthews (Dept. 6), president; Hank Callihan (Dept. 6), vice president; Bonnie Smith, wife of Russell Smith (Dept. 98-7), secretary; Dick Perkis (Dept. 97-5), treasurer. Judicial board members are Lou Barnes (GD/E), Jim Hamill (GD/E), Charley Mohr (Dept. 6), Grant Parker (Dept. 160), Clark Kerr (Dept. 6), and Duane Tubbs (GD/E).



COME ONE, COME ALL—Convair Hoedowners (above) are deep in plans for upcoming All-General Dynamics Hoedown and Jamboree which they will host in San Diego this month. Above shot caught CRA square dancing group during recent annual luau.

Sports & Recreation



BLOCKED—Ralph Long (Dept. 218) blocks club of CRA match play and sweeps champion, Wayne Hines (Dept. 140). Long placed second behind Hines in CRA tourney.

Hines Captures Second Win In Convair Golf Competition

Wayne Hines (Dept. 140) laced his way to a second major golf tourney championship this season when he walked away victor of CRA's annual match play competition last month.

Hines previously had won the Convair Golf Club championship in June.

Ralph Long (Dept. 218) finished second in the match play conducted over three weekends, Sept. 11, 18, and 23.

Played on Circle R course, Hines paced the card of golfers with birdies on the 2nd, 14th and 16th holes.

Other winners included Andy Simington (Dept. 292), first flight; Charles Maikish (Dept. 190), second flight; Elbert Smith (Dept. 25), third flight; John Sawicki (Dept. 6), fourth flight; John Graves (GD/E), fifth flight; Bill Carr (Dept. 190), sixth flight; Fred Maus (GD/E), seventh flight; Henry Kobrick

TICKETS AVAILABLE TO FILM FESTIVAL

A 20 per cent discount can be obtained by GD/Convair employees to the Coronado Film Festival by showing identification cards at door of Hotel del Coronado. Films will be shown each night until Saturday (Oct. 14) at 6:15 p.m. and 9:15 p.m.

(Dept. 401), eighth flight; and Bill McColley (Dept. 91), ninth flight.

Runners-up in the nine flights, starting with the first, were: Norm Dahl (Dept. 45), Jerry Swarts (Dept. 48), Ed Kerfeld (Dept. 31), Walter Bore (Dept. 192), C. R. Lind (Dept. 25), Vincent Mavrinac (Dept. 401), Truman Solberg (Dept. 91), Robert Sinnott (Dept. 14) and A. D. (Frenchy) Desrosier (Dept. 140).

ARA-CRA Racquetters Dominate IRC Tourney

Members of ARA and CRA Tennis Clubs dominated play in San Diego Industrial Recreation Council (IRC) tennis tournament recently concluded at Morley Field.

The GD/Astro team of Ben Cendali (Dept. 573-2) and Larry Chambers (Dept. 305) won doubles championship over Stan Griffin and Dennis Sealy (both Dept. 6), GD/Convair, 3-6, 6-2, 6-3.

Griffin captured the singles crown by edging John Cannau (GD/Astro Dept. 597-3) in three sets, 3-6, 6-1, 6-4, and GD/Astro's Ron Sanchez (Dept. 578-2) won consolation singles championship.

Square Dancers Will Converge For Jamboree

Square dancers from all over will converge on San Diego late this month to do-se-do at the annual All-General Dynamics Hoedown and Jamboree.

Convair Hoedowners, host group, expect 80 persons from Pomona and at least 50 dancers from Astronautics to take part in the yearly dancing event. Heading Astro Nauts will be Marty Stutz, ARA commissioner. John Warren, PRA commissioner, will arrive with the Pomona contingent of Convairiety Steppers.

Maury Scholz, CRA commissioner, says arrangements are under way for a big time on the Oct. 28 date. Wes Oswald, Hoedowners vice president, is deep in plans for the 6:30 dinner which will kick off the Jamboree in the American Legion Hall, 4061 Fairmount Ave.

Callers from Convair and Astro groups will be on hand when squares form at 8 o'clock. Live music will be furnished by the "Square Notes," local Western band. The "Wheelacades," who go through lively square dancing routines in wheel chairs, will perform during the intermission.

Rockhounds Slate Weekend Barbecue Next Saturday

Rockhound enthusiasts and their families will gather for the club's annual barbecue at Pecan Park Saturday (Oct. 14). Serving time is 6 p.m.

Dan Whorton, CRA commissioner, urged all members to attend and bring slides or films of field trips taken in the past year.

Whorton said present classes for novices in the Rockhound Shanty on Pacific Hwy. are under way but interested potential rock hunters still may try their skill on the club's polishing and grinding wheels.

In other activity, the club is planning a field trip to Yermo on Oct. 21-22. Petrified wood, agate, and sagenite are plentiful in the area.

Persons interested in joining the club or making the October field trip should contact Whorton, ext. 426, Plant 1.

Coin Club Presidents To Be Honored at Fete

Past presidents of General Dynamics/Convair Coin Club since it was organized in 1953 will be honored at the club's regular meeting to be held in the executive dining room of the Convair cafeteria at 7:30 p.m., Oct. 19, Al Baber, president, has announced.

Club members are urged to attend this special tribute, Baber said. There will be a coin auction, and door prize. Refreshments will be served.

Ice Skating In Full Swing For CRA Fans

The joint ARA-CRA Ice Skating Club season is in full swing with weekly skating sessions held at Iceland, 6055 Lake Murray Blvd.

Club members have exclusive use of the rink from 6:30 to 8 p.m., Thursdays; then may continue to skate until 10 p.m. for no additional charge after the rink is opened to the public.

Admission is 75 cents for adults, 50 cents for youngsters under 16, and skates may be rented for 35 cents. Spectators are admitted free.

Club members receive free skating instruction from Audrey Ericson. An advanced dance class starts at 6:45 p.m., intermediates at 7 p.m., and beginners at 7:15 p.m.

Additional information is available from Martha Woodberry, CRA commissioner, Plant 1, ext. 1245, or from Bud Davies, ARA commissioner, GD/Astro ext. 3441.



BUY NOW—Grace Daleo (Dept. 142) displays new seat belts on sale at the safety crib, Bldg. 32, Plant 1.

Auto Safety Belts On Bargain Sale

GD/Convair has resumed sale of auto safety belts at bargain rates for employees, M. C. Val Dez, chief safety engineer, announced this week.

Manufactured by Auto-Crat, belts are priced at \$6.25 each, including tax (a 35 per cent saving) and can be purchased at safety tool crib, Bldg. 32, Plant 1, by cash or payroll deduction.

Belts are available in nine colors, are easily installed and feature a new swivel-clip which provides greater freedom of movement with maximum safety.

October Open House Set by Camera Club

Open house, combining model shooting and print exhibition, is scheduled by the Camera Club each Sunday in October, 1-5 p.m., at the Photo Arts Bldg., Balboa Park.

Ron Ainsworth, club spokesman, said everyone is welcome and urged all members to display their prints.

Camera Club will meet Oct. 23, 7:30 p.m., Photo Arts Bldg.

Aeromodelers Set For Tri-Club Meet

GD/Convair's Aeromodelers will join GD/Astro and the San Diego Orbiters in a jointly-sponsored tri-club meet Oct. 22, Hourglass Field, 8 a.m. to 2 p.m.

Don Larsen (Dept. 15), Aeromodeler president, urged all modelers, and interested spectators to attend. Trophies will be awarded by each club.

WATER SKIING CLUB SEEKS NEW MEMBERS

Persons interested in learning to water ski are urged to join GD/Convair's skiing enthusiasts at Santa Clara Pt., 9 a.m. to 1 p.m., Oct. 14 and 21, Gene Sevigny, skiing club commissioner, announced.

Long Career Forecast For 'Forty Four' as Best Of Freight Airplanes

A prediction that the Canadair Forty Four turboprop will remain the world's best freight airplane for years to come was made recently by Robert W. Prescott, president of Flying Tiger Line.

In the first 1,600 hours of flight time Flying Tiger's initial five Forty Fours of the 10-plane order proved out everything that had been predicted for them in economy, reliability and capability, Prescott told the press at a Washington, D.C., demonstration. Forty Fours are built by Canadair Limited, subsidiary of General Dynamics Corporation.

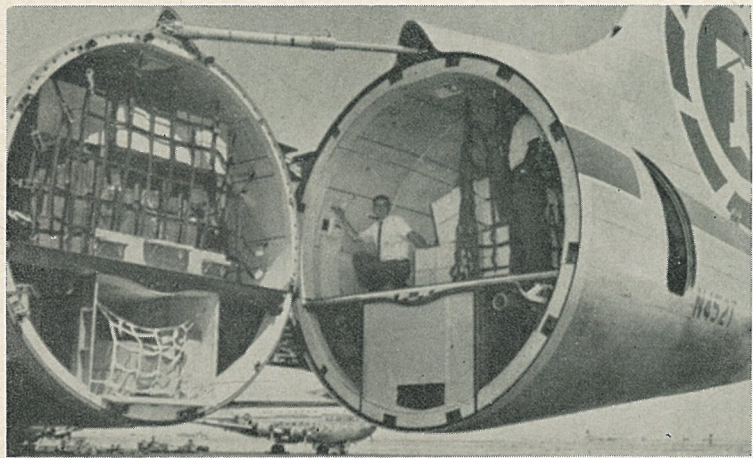
The first scheduled flight for Flying Tiger was made by a Forty Four July 16 when "51T" left Travis AFB (near San Francisco) on a MATS flight carrying 134 passengers and a crew and inspection team of 16. It landed in Tokyo 19 hours, 24 minutes later, with a fuel stop at Anchor-

age, Alaska. A little more than 12 hours afterward 51T was on its way back to the states with another load of passengers.

On another Forty Four flight to Tokyo Flying Tiger claimed a new record of more than 61,000 pounds of freight transported over ocean. In the first trans-Pacific freight flight by a Forty Four, 52T left Travis July 28 and flew via Honolulu and Wake Island. Less than seven hours after arrival it took off for home. Total elapsed time for the round trip was less than 48 hours. The lift surpassed the previous mark held by a Flying Tiger Super H Constellation of 44,600 pounds of cargo.

Despite the record, the Forty Four was not loaded to capacity.

Seaboard World Airlines, operating from New York to Europe, is flying two Forty Fours of five ordered. Slick Airways will receive two Forty Fours this fall.



LOADED—Ready to secure swing tail, Forty Four is loaded with record freight tonnage by Flying Tiger Line prior to takeoff for Tokyo.

GD/Convair Delegation To Attend 'William Tell'

At least 16 General Dynamics/Convair men will be on their way to Panama City, Fla., next week to observe performance of Convair jet interceptors in this year's USAF Worldwide Weapons Meet (called "William Tell") at Tyndall AFB.

In charge of GD/Convair's participation is H. J. Richardson of GD/Convair marketing.

Others planning to be on the site during the maneuvers are R. W. Warden Jr. of General Dynamics military relations; O. W. Harper, GD/Convair manager customer service; L. E. Ottem,

chief military programs engineer; Roy Sommers, chief interceptor service; W. W. Fenton, Hal Wilson, Rod Fowle, S. B. Stevens, all of interceptor service engineering; Howard Kennedy, chief of service publications; L. J. Solheid and G. P. Williams, both of service publications; P. A. Carlson, Model 8 project engineer; W. A. Daniel, assistant Model 8 project engineer; E. A. Fish of customer service; Howard Auten, test pilot at Holloman AFB; R. E. Myrann, engineering test pilot, formerly chief test pilot at Palmdale.

Full Passenger Loads Riding TWA 880s As Jets Streak From St. Louis to N.Y.

Full passenger loads welcomed Trans World Airlines Convair 880 service connecting Tulsa, Okla., with St. Louis and New York in late August.

According to Tulsa Daily World aviation columnist Frank Leslie, "the most heartening thing, on Aug. 19 and 20 inaugural flights, was hearty passenger loads hauled by the swift, four-engine jets."

"The Convair 880 was about half full when St. Louis passengers departed on the Saturday return. But the plane filled up

again when Tulsa-bound travelers boarded.

"TWA had about 40 people waiting at the Tulsa Municipal Airport for the afternoon return trip Saturday.

"This TWA SuperJet leaves the ground like a 'scrambled' fighter called to combat duty," wrote Leslie, whose comments were forwarded by Glen Arner, General Dynamics/Convair service rep at Oklahoma City. "And once aloft, it seems to take pure physical pleasure in streaking to its destination!"

RCAF Orders 190 CL-41 Jet Trainers From Canadair Ltd.

Canadair Limited's CL-41 has been chosen the new basic jet trainer airplane for the Royal Canadian Air Force.

Canadian Minister of National Defence Douglas S. Harkness announced that 190 are being ordered to enter service in 1963.

"The RCAF has been considering the introduction of a basic jet trainer for several years, and has tested and evaluated most of the training aircraft available," Harkness told the House of Commons. "The CL-41 is the newest and most modern jet trainer available."

Designed, developed, and produced in prototype by Canadair as a company venture, CL-41 has side-by-side seats, and is capable of teaching a student pilot his whole course from first flight to supersonic airplanes.

With a speed range from 75 miles an hour to 475, the CL-41 has an altitude capacity of 44,500 feet and a typical training mission endurance of two and a half hours.

CIP and ES Savings Pass \$50 Million

Combined installed savings from Cost Improvement Proposals and Employee Suggestions since the program's inception at General Dynamics/Fort Worth in 1942 reached the \$50 million mark in August.

And cash awards to employees for installed ESs reached a cumulative \$383,174. M. J. Scott, administrator of the suggestions program, estimated that about 20 per cent of the over 66,000 ESs submitted since 1942 had been approved and installed.

"The \$50 million record is one that every department can be proud of," Scott said.

Helping to push the installed savings total over the top in August were two CIPs totaling over \$100,000.

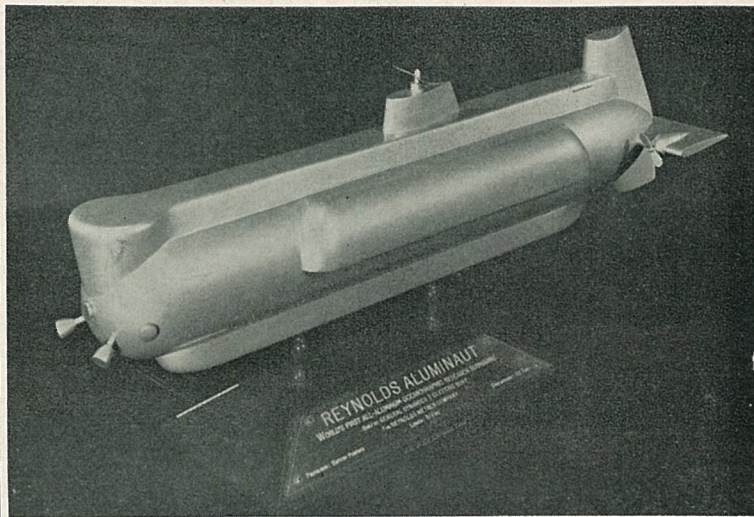
J. T. Rhoades, Dept. 74 assistant foreman, saved an estimated \$73,636 the first year with his suggestion to discontinue complete refinishing of B-58s between flights and replace only decals that cannot be clearly distinguished.

Another Dept. 74 assistant foreman, W. G. Allen, suggested sewing a row of stitching 1/4-inch in from the outside edges on B-58 insulation panels, reducing sewing time and saving material.

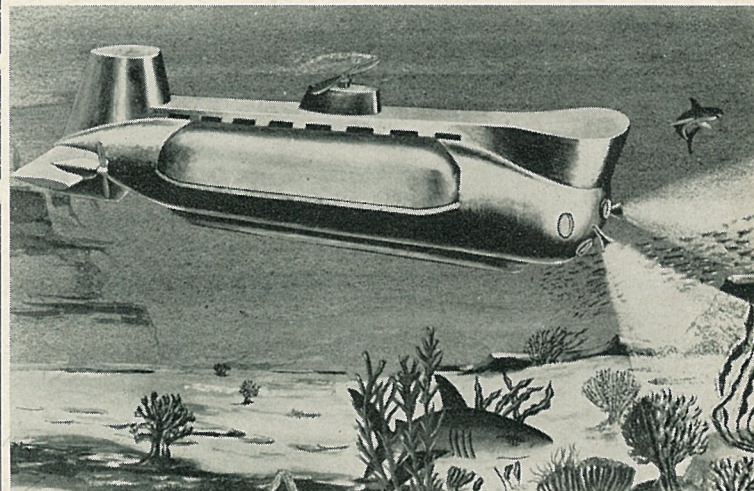
GD/Electronics Wins Tracking Contract

General Dynamics/Electronics has been awarded a contract by the U.S. Naval Supply Center, at Oakland, Calif., to produce three "Two-way Doppler Tracking Systems" for shipboard operation on the Pacific Missile Range.

The systems, which will make extensive use of solid-state circuitry, will include tracking antennae, ultra high frequency transmitters, extremely sensitive phase-lock receivers, and data processing and recording equipment.



"ALUMINAUT"—General Dynamics' design for "oceanographic research submarine" to be built for Reynolds International was disclosed this week. Above is model of deep-diving (15,000 feet!) craft.



ON OCEAN FLOOR—Artist's conception shows "Aluminaut" cruising ocean deep. Craft is designed to carry pilot and two scientists.

Sensational Aluminum Submarine to Explore To 15,000-Foot Depths

An aluminum research submarine designed to explore the ocean at depths many times beyond the limit of existing subs will be built for Reynolds International, Inc., by General Dynamics Corporation's Electric Boat Division.

J. Louis Reynolds, chairman of Reynolds International, Inc., a subsidiary of Reynolds Metals Company, and Frank Pace, chairman of General Dynamics, have announced signing of a \$2 million design and construction contract for the Aluminaut—first submarine ever to be constructed from aluminum.

Woods Hole Oceanographic Institution (Massachusetts) will operate the sub as part of a research program sponsored by the Office of Naval Research, (ONR) United States Navy. Most of the construction costs incurred by Reynolds will be recovered through lease of the craft for oceanographic research.

Construction of the Aluminaut will begin immediately at Electric Boat Division in Groton, Conn., and launching is scheduled for 1963.

"Designed to operate at depths of 15,000 feet — almost three miles down — the Aluminaut will permit man to explore about 60 per cent of the world's ocean floor — most of it for the first time," Reynolds said.

The Aluminaut is scheduled to

be equipped with sonar, TV cameras for detailed observation of the ocean floor and robot hands to obtain specimens.

Displacing 150,000 pounds, the Aluminaut will be slightly over 50 feet long with an eight-foot-diameter hull. Separate electrical propulsion systems will give the three-man craft both horizontal and vertical locomotion. Its operating range will be about 80 miles.

"The sub's hull will be constructed by bolting together large, one-piece cylindrical sections of high-strength aluminum forgings. The world's largest aluminum ingot already has been cast for the first hull section," Reynolds said.

"Aluminum was chosen because it is three times lighter than steel and has greater strength for its weight than other available metals. This allows fabrication of a hull thick enough to withstand tremendous pressure at great depths, yet light enough to stay afloat without external buoyancy."

"In our constant research for new uses for aluminum we long have been convinced that an important potential lies in the field of ship and certain types of submarine hulls," Reynolds said.

Operating independently of hoists from surface ships, the Aluminaut will be a true submarine, capable of cruising the ocean floor.

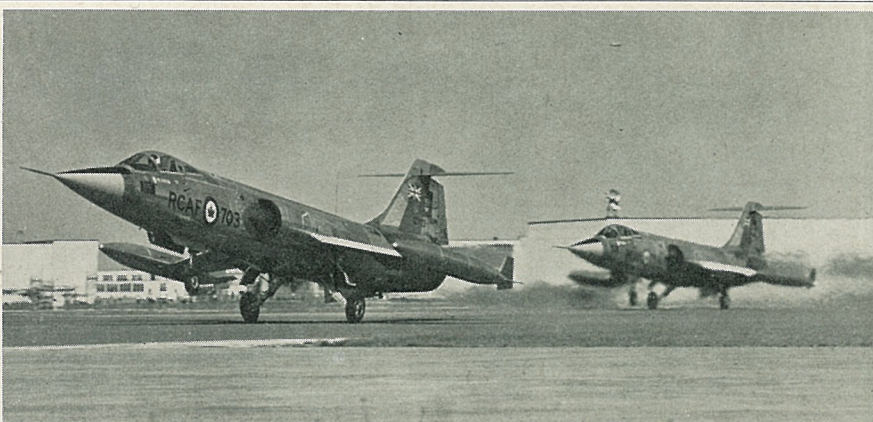
A vertical propeller will permit it to hover for special observations, and serve to regulate rate of descent and ascent.

Speed will be 3.8 knots, with a 72-hour maximum time submerged. Storage batteries will drive the vertical propeller, as well as twin screws at the stern.

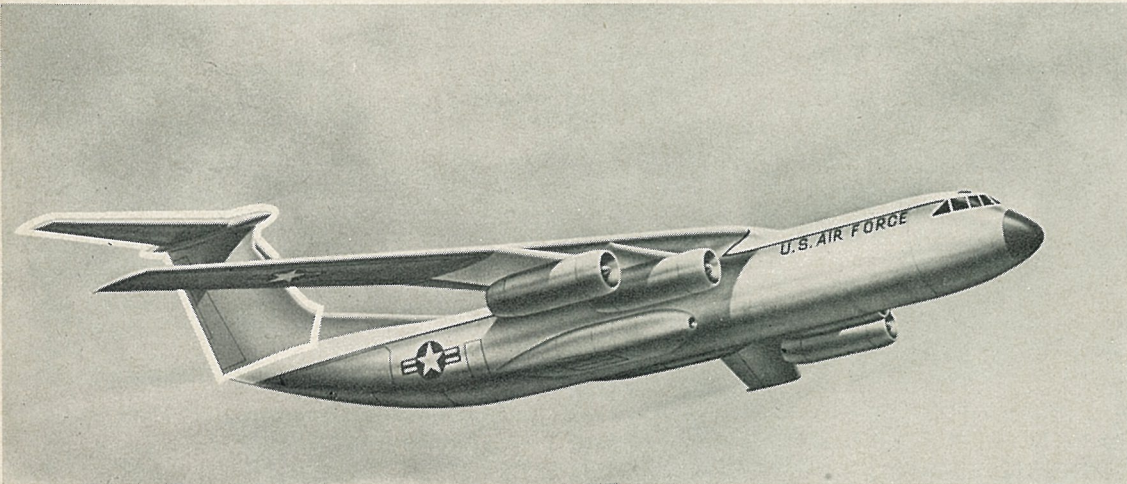
"The ocean floor is a relatively unknown treasure house of minerals, oil, chemicals and food sources," Reynolds added. "A new generation of undersea craft . . . could be equipped with mechanical arms to operate mining equipment, make borings and collect material from the sea bottom."



CF-104S AT MONTREAL—Tenth CF-104 built by Canadair Limited at Montreal rolled off final line recently. Ships No. 3 and 4 were test flown from Palmdale, Calif., this summer, followed by



test flights for No. 1 and 2 last month at Montreal (right above). Canadair employees (left above) turned out for demonstration. Ships are being manufactured for Royal Canadian Air Force.



TAIL JOB—Outlined is empennage component that GD/Convair will build for giant Air Force C-141 cargo transport, under subcontract from Lockheed-Georgia.

Heavily Loaded 990 Airliners Flown For FAA

Two Convair 990 airliners are now at Edwards AFB, Calif., in an extensive testing program as the latest-model Convair jet transport heads toward Federal Aviation Agency certification.

Altogether, five 990 jetliners will be in the FAA certification testing program by the end of the month.

Ship No. 4 joined No. 2 there a couple of weeks ago to double the takeoff and landing program which continues into next month.

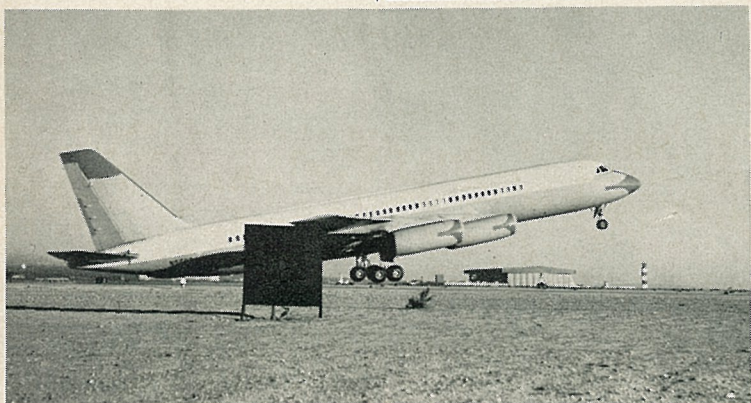
No. 2 plane went to Edwards late in September to begin performance testing. It is doing takeoffs at, and over, specified maximum gross weight—some takeoff loads as high as 250,000 lbs.

Speed at takeoff is dropped to the lowest rate at which the plane will remain barely airborne as it leaves the runway. Actual takeoff speed never will drop to within five per cent of the testing airspeed, explain flight test engineers. But the testing is done at the lowest possible takeoff speed to establish a safety limit.

As many as 13 takeoffs and landings are performed each day in early morning hours at the desert site, with FAA officials aboard.

Plane No. 2 also is doing stalls and climbs as a portion of its program. No. 4 is put through rejected takeoffs—to determine proper emergency operations in aborted takeoffs. It also is making landing tests under different conditions.

As the FAA certification program is pushed toward its ultimate conclusion, plane No. 1 now is in flutter, stability, and control testing. No. 5 is assigned to communication, navigation, fuel system tests and will do Sperry autopilot checkouts. Present plans will see No. 6 go into functional and reliability testing by the end of the month.



DESERT TAKEOFF—In lonely stretches of bleak California desert, Convair 990 is snapped by C. E. (Skip) Bowers of Dept. 31 as it makes dawn takeoff from Edwards AFB runway in FAA certification proving. Markers (in foreground) are spaced 1,000 feet apart.

DOUBLE-BARRELED CON-TRIB EFFORT WILL BEGIN NOV. 6

A vigorous double-barreled Con-Trib-Club campaign to enlist 100 per cent participation and 100 per cent "fair share" giving will be waged Nov. 6-17 at General Dynamics/Convair.

Simultaneously, San Diego County United Fund, hard-pressed with its 97 agencies, will kick off a \$4.6 million drive, biggest and most urgent in the charity organization's career.

"Spectacular county growth has seriously jeopardized the financial position of United Fund and other community charities," J. H. Famme, GD/Convair vice president and general manager, said.

"It is imperative for the stability and continued growth of our community that we wholeheartedly support Con-Trib and, through that, the entire charity complex."

United Fund's goal, \$1 million above last year's, is based on member agency requests. Each agency underwent rigid scrutiny for justification of costs.

J. K. Field, chief of employee services and Con-Trib drive chairman, said, "Concerted effort will be made to bring new employees into the club and if every employee gives according to his ability the drive will be successful."

Assisting Con-Trib committee in the double 100 per cent push will be union representatives from IAM, EAA, IBEW, IATSE.

Tab cards will be circulated by supervisors and union committeemen to all employees who then can sign and indicate a "fair share" for payroll deduction.

Joining Con-Trib, Field explained, is a "once, for all" proposition. Convair will not condone any other drive in the division short of a major disaster.

Con-Trib-Club contributed last year \$270,000 to the United Fund and other agencies.

GD/Convair's Emergency Aid fund, maintained permanently out of Con-Trib collections, paid out \$27,052.

F-102s and F-106s Vie This Week In Weapon Firing Maneuvers

Convair F-106s and F-102s vie this week in the 12-day weapon firing maneuvers at Tyndall AFB, Fla., to test their capability under normal air defense conditions, Oct. 23-Nov. 3.

Besides the nine teams from F-106 and F-102-equipped squadrons throughout the United States, four F-101 teams are participating in the annual William Tell, or USAF Worldwide Weapons Meet.

Lt. Col. Joe Rogers, who piloted the F-106 to set the world speed record of 1525.95 mph in December of 1959, will captain the F-102 team from 317th FIS, Alaskan Air Command.

Other F-102 teams competing are from 331st FIS, Webb AFB, Texas; 59th, Goose Bay, Labrador; 182nd, Air National Guard, Kelly AFB, Texas; 3555th Combat Crew Training Wing, Perron AFB, Texas.

F-106 teams are from 539th FIS, McGuire AFB, N.J.; 11th FIS, Duluth AFB, Minn.; 498th FIS, Geiger AFB, Wash.; 456th FIS, Castle AFB, Calif.

On the spot for observation and support are at least 20 General Dynamics/Convair men.

Coordinating GD/Convair's participation is H. J. Richardson, assistant director of marketing, acting as project officer.

According to present plans, J. H. Famme, general manager of GD/Convair, will present Convair trophies to winning F-102 and F-106 teams at the close of competition.

Armstrong Installed By Rocket Society

G. L. Armstrong, chief project engineer on the Atlas program at General Dynamics/Astronautics, was installed as president of the San Diego Chapter of American Rocket Society last month.

Dr. A. E. S. Green, chief of physics at GD/Convair, is new vice president; and T. B. Woerschling, GD/Convair design specialist, treasurer.

GD/Convair Wins Contract to Build C-141 Tail Section

Award of a \$6½ million subcontract to General Dynamics/Convair to build tail sections for the new Air Force jet cargo plane was announced earlier this month.

Lockheed Aircraft Corporation, Georgia Division, is prime contractor for the cargo plane, designated the C-141, with a letter contract for five for development testing.

However, the Air Force has indicated that it will, in all, invest \$1 billion for 132 of the C-141s. This could increase General Dynamics/Convair's total subcontract amount to approximately \$28 million for the entire program, it was estimated.

J. H. Famme, general manager of GD/Convair, announced appointment of James M. Adamson as C-141 project manager.

B. J. Simons, chief engineer, named R. W. Miller, structural group engineer, project engineer last week as the nucleus of a directing project group began to take shape at San Diego.

At Marietta, Ga., to confer with Lockheed officials soon after first announcement of the subcontract were J. S. Bergstrom, assistant chief engineer; Adamson; and structural design engineers, R. J. Schulte and R. A. Close.

Overall C-141 project manager is Charles S. Wagner, Lockheed Georgia Division vice president.

GD/Convair is but one of many aircraft industries throughout the United States to have a share in construction of the military airlift jet transport. Lockheed has guaranteed to subcontract at least 61 per cent of the entire Air Force order.

Besides the empennage, or tail section, awarded GD/Convair, pylons, nacelles, thrust reversers, wingtips, wing leading and trailing edges, flaps, ailerons, cargo floor, wing box beams, and many systems also will be subcontracted.

The turboprop freighter, designed to bolster U. S. strategic airlift, is expected to make its first flight in late 1963.

The transport will have an overall length of 146.2 feet. The T-type vertical tail height is 39.1 feet. Wing span is 160.7 feet. The plane will carry a payload of more than 85,000 pounds for transcontinental nonstop hauls. Maximum takeoff weight is specified at 315,000 pounds. Petal-shaped doors at the rear open outward to allow rapid straight-in, truck-level loading and unloading.

Power plants will be four Pratt and Whitney TR 33-P-7 turboprops, each developing 21,000 pounds of thrust.

Cruise speed will be 506 to 550 statute miles per hour at cruise altitudes up to 45,000 feet.

Fuel capacity is 150,000 pounds. FAA takeoff field length for the C-141 at maximum takeoff gross weight is 6,000 feet.

Commercial version of the giant airlifter for civilian use will be designated the Lockheed 300.

Task Force For 'Save Material' Drive Formed

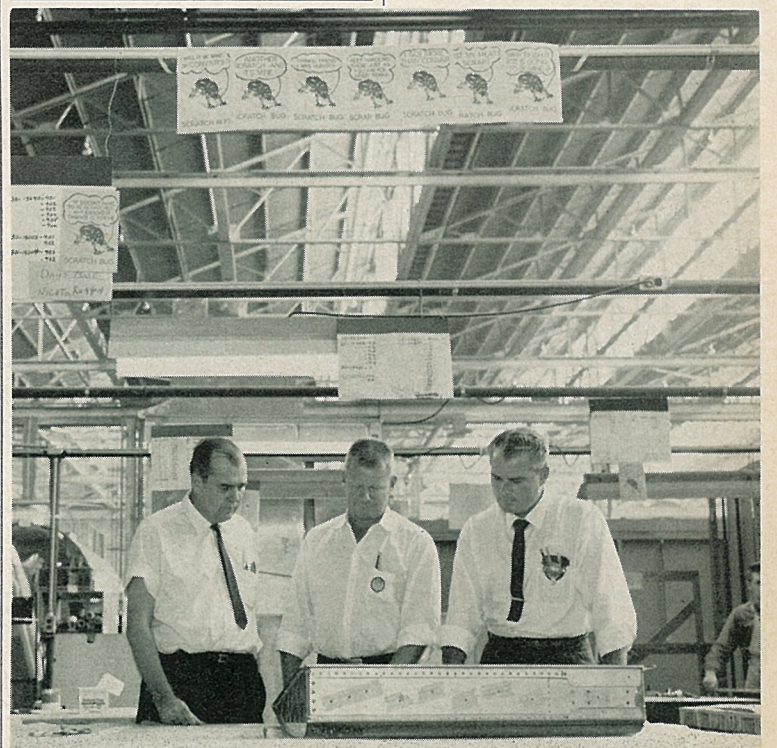
A material handling function will be activated within the transportation operations department, effective Oct. 30, to further implement the current material handling drive at General Dynamics/Convair.

It will be Dept. 21-7, reporting to B. R. Hisaw, chief of transportation operations.

Personnel are being recruited from experienced material handling men within the division. They will be headquartered in an office area now under preparation in Bldg. 10, adjacent to present Dept. 21 administration offices.

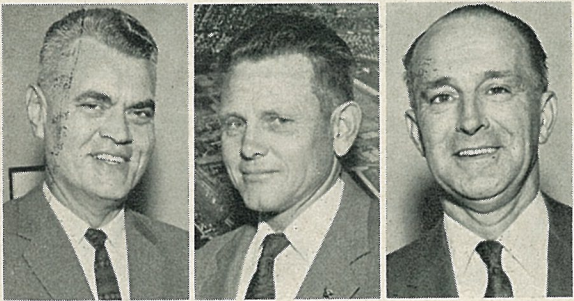
Next concrete step in the re-

(Continued on Page 2)



"DEBUGGED"—In plant-wide drive to keep plane skins from scratches and mars, L. E. Anderson, B. E. Hill and George Allin, of Dept. 119 at GD/Convair, examine bonded honeycomb panel for 990 wing flap in Bldg. 3 metalbond cleanup area. Note "scratch bug" posters hanging from rod above.

Log Book Entries



VETERANS ALL—Sporting 25-year service emblems this month are, from left, G. D. McVicker, General Dynamics corporate office, Dept. 1-65; and GD/Convair men, W. B. Summers, Dept. 6, and E. B. Kellogg, Dept. 5.

Service Emblems

CONVAIR

Service emblems due during the period Oct. 16 through Oct. 31.

Twenty-five-year: Dept. 2-2, F. E. Grossher; Dept. 6-40, H. K. Cheney; Dept. 31, S. A. Dodd, A. V. Elio; Dept. 137, B. T. McMicken; Dept. 171, F. F. Stevens; Dept. 188-0, J. J. Swarts.

Twenty-year: Dept. 6-35, S. O. Atwood; Dept. 15-5, W. W. Combs; Dept. 48, H. L. Gustafson, Buddy Hahn, G. L. Sandefur, J. C. Williamson; Dept. 90, A. L. Hendricks; Dept. 91-7, Lewis Baum, A. H. Vandevort; Dept. 101, J. H. Hammer.

Dept. 137, M. H. Button; Dept. 148, C. T. McNeese; Dept. 160, Stephen Rivas; Dept. 192-1, H. J. Dwiere; Dept. 218, S. S. Marshall; Dept. 400, C. W. Banks, L. C. Crider, J. I. Manning; Dept. 401, Arthur Castro, H. R. Hillmann, W. A. Phipps, Herbert Tieszen.

Fifteen-year: Dept. 3-1, G. R. Kuester; Dept. 15-6, L. A. Doore; Dept. 31, R. A. Cole; Dept. 48-11, Ruth L. Curry; Dept. 100, G. E. Baumgartner, Elsie S. Stanley; Dept. 115, Warren Ross; Dept. 117-0, E. C. Jankowski.

Dept. 128, Maria C. Frescas; Dept. 129, Irene Q. Tucker; Dept. 133, Claudine M. Quisquis; Dept. 140, O. O. Kroll;

Dept. 145, M. R. Doswald, Raul Santos; Dept. 160, A. W. H. Papstein, W. D. Ross; Dept. 192-3, M. F. Nicodemus;

Dept. 206, W. D. Isenhowers.

Ten-year: Dept. 1-24, F. M. Wynkoop (due 10-8-61); Dept. 6, P. R. Kolbe, T. H. MacDonald, J. E. Northrop, F. J. Signorelli; Dept. 25, D. F. Cavanagh, J. R. Condit, W. L. Dexter, E. A. Forward, R. R. Ramirez.

Dept. 31, G. M. Peterson; Dept. 34-1, Margaret M. Lawrence; Dept. 44-3, R. S. Reed; Dept. 45-0, R. D. Tuttle; Dept. 48, J. F. Akers, Lelia T. Helms, Eugenia G. Oliver, R. C. Sutton; Dept. 95-0, B. J. Napier; Dept. 97, Lorene F. Anderson, Ruby G. Hill.

Dept. 101, Cora S. Turner; Dept. 115, R. A. Gomez; Dept. 123, Lillian M. Pelkey; Dept. 128, P. F. George; Dept. 129, Augustine Scott; Dept. 133, Bernice F. Daniels, Edith E. O'Brien, E. W. Workman; Dept. 135, J. C. Svoboda;

Dept. 139, G. W. Everett, J. H. Mitchell; Dept. 140, John Henry; Dept. 142, A. W. Sandsten; Dept. 145, T. D. Blaine, C. D. Russell; Dept. 148, N. A. Graham Jr., B. F. Watson; Dept. 160, R. C. Acosta, S. W. Cooper, L. E. Flood;

Dept. 171, C. L. Hutchison; Dept. 180-0, K. B. Dickerman; Dept. 192-3, D. E. Young.

Dept. 201, Rosa M. Ferrell, C. H. Hash; Dept. 215, Jo Ann Flaugh, E. W. Krueger, Vera S. Riley; Dept. 216, Katherine O. Brown, Theresa M. Buchholz, Madalyn G. Giegar; Dept. 218, Clara E. Archibald, Mae P. Rust; Dept. 292, L. G. Poulson, Doris B. Wentworth; Dept. 400-8, Marie G. Ortega; Dept. 401, Hilda K. McDonald, L. S. Shipman.

GD/ELECTRONICS

Fifteen-year: Dept. 6, E. R. Fuhrman.

Ten-year: Dept. 6, A. O. Aasen.

Personals

CONVAIR

I would like to take this means of expressing my deep gratitude to the host of GD/Convair friends for the many kindnesses and expressions of friendship shown to me in so many different ways, and for the thoughtfulness and consideration of people in the inspection and insurance departments. I miss you all very much and look forward to your visits.

Kay Martin (Dept. 188), 3210 Poe St., San Diego 6, AC-3-0129

I wish to extend my heartfelt thanks and appreciation to GD/Convair friends for the kind expressions of sympathy and beautiful floral offerings received in the recent loss of my wife. I also want to thank the Convair blood bank for contributions. The Hager family joins me in saying thank you.

Archie L. Tyler, Dept. 6 retiree.

The beautiful flowers sent by GD/Convair employees at the death of my husband, Walter T. Andersen, retired from Dept. 280, were very much appreciated.

Mrs. Walter T. Andersen.

We would like to express our appreciation to Convair friends for the many flowers and cards sent to us in the loss of our beloved husband and father, Benjamin F. Kiegle.

Mrs. Benjamin F. Kiegle and son.

Promotions

CONVAIR

Promotions to or within supervision effective Oct. 9.

Dept. 3, Industrial Relations: To guard lieutenant, G. L. Duncan. To industrial relations adm.-engineering, B. L. Dobler.

Dept. 6, Engineering: To senior project engineer, D. H. Bennett. To senior technical group engineer-thermo, J. A. Brown. To technical group engineer-thermo, B. F. North. To electrical group engineer, R. F. Myers, W. A. Schmitz Jr.

Dept. 8, Systems and Procedures: To systems and procedures supervisor, C. K. Twohey.

Dept. 16, Communication: To chief of presentation and arrangements, H. L. Montgomery. To office services supervisor, J. A. Dempsey.

Dept. 17, Marketing: To senior requirements engineer, W. R. Lee.

Dept. 44, Material Control: To parts listing supervisor, E. B. Kellogg. To material release supervisor, M. D. Myers Jr.

Dept. 48, Quality Control: To asst. group engineer, G. G. Bergant, R. G. Huff.

GD/ELECTRONICS

Dept. 9, Production Test and Inspection: To inspection asst. supervisor, R. G. Sandoval.

Retirements

CONVAIR

SYLVESTER—Otto P., Dept. 48-11. Seniority date May 20, 1947, retirement effective Oct. 7, 1961.

THOMAS—Oscar R., Dept. 133. Seniority date Aug. 27, 1952, retirement effective Oct. 6, 1961.

VANO—Lawrence, Dept. 115. Seniority date March 24, 1947, retirement effective Oct. 6, 1961.

Deaths

CONVAIR

LOVELACE—William L., Dept. 50. Died Oct. 17. Survived by wife, Barbara Lou, five children.

DOCUMENTATION CHAPTER FORMED

General Dynamics/Convair and General Dynamics/Astronautics people involved in any form of documentation are invited to attend an organization meeting of a San Diego Chapter of the American Documentation Institute.

The initial meeting for election of officers and planning for a year's agenda will be tomorrow (Oct. 26) at 7 p.m. in the Astro reception building presentation room, second floor.

The Institute, incorporated in 1937, provides a forum for discussion, publication, and critical analysis of all elements connected with communication of recorded specialized information, explained Keith Blair, GD/Convair chief librarian. The organization is of especial value to scientists, engineers, administrators, information specialists, data processing specialists, and librarians interested in the exploding technology of documentation, he continued.

Information and membership applications are available from Blair, ext. 1543, Plant 1; and L. Canter, chief librarian at GD/Astronautics, ext. 1073.



GET-TOGETHER—C. F. Horne met recently with veteran General Dynamics/Electronics employees at Rochester, N.Y. He is shown presenting scroll during luncheon gathering.

Task Force For 'Save Material'

(Continued from Page 1)

emphasized conservation program will see training procedures put into effect within the next few weeks, said Hisaw.

Training, formulated with assistance of educational services, will highlight material handling principles, identification, and utilization of handling equipment, material damage prevention.

A manual on material handling and storage practices is being prepared to go hand-in-hand with the training program. It will illustrate material handling equipment, storage aids, and standardized packaging methods. Emphasis will be on proper identification and fuller use of all available equipment, said Hisaw.

"In general, we have a right piece of equipment to handle every piece of material," he concluded. "Using proper material handling equipment will hold handling costs down and reduce material damage."

New Dept. Numbers Added at GD/Convair, Including Marketing

Four new department numbers will go into effect this month at General Dynamics/Convair.

Dept. 17 is designation for the new marketing department.

Applied manufacturing research and process development department will be Dept. 23. Former department number (Dept. 190) has been eliminated. Operations planning is a separate department—Dept. 20.

Functions under Dept. 23 are 23-1, applied manufacturing research; 23-2, technical services.

Facilities engineering is Dept. 24. Functions are: 24-1, manufacturing project planning; 24-2, facilities control; 24-3, facilities budgets and work control; and 24-4, facilities design.

GD/Electronics Leases S-C 4020 to Dept. of Def.

General Dynamics/Electronics has signed a lease agreement with Department of Defense for delivery of an S-C 4020 Computer Microfilm Recorder.

Announcement of the lease agreement for approximately \$74,000 a year was made by George McGinley, manager of Computer Printer Marketing for Information Technology Division of GD/

Electronics. The S-C 4020 is scheduled for installation this month, he said.

The unit will take coded information from an IBM 7070 computer and translate the computer language into graphs, curves and alphanumeric recording on 35mm microfilm at extremely high speeds.

S-C 4020 is adaptable to both commercial and scientific applications and is compatible with most high-speed computers and data processing systems, operating either direct from the computer or from magnetic tape. The heart of the machine is the GD/Electronics' CHARACTRONR shaped beam tube.

RECORDER SERVICE OFFERED BY GD/E

General Dynamics/Electronics has announced installation of a Service Bureau, for recording computer data on microfilm at Information Technology Division, 1895 Hancock Street, San Diego.

Al Aron, training supervisor, is in charge, assisted by Jake Konen, instructor.

Capabilities of the S-C 4020 High Speed Microfilm Recorder are offered the data processing industry on an hourly rental basis.

According to users of S-C 4020, the equipment provides the least expensive and fastest method of translating scientific computer language into alphanumeric printing, plotted curves, tabular data, or a combination of these operations, and recording the information on 35mm microfilm. The service also provides for page-size paper copy prints of the processed film.

Clint Hamann Dies Suddenly

Clinton R. Hamann, Dept. 91-0, one of GD/Convair's pioneers, died in his sleep last week.

A native of Brooklyn, N. Y., he received his education there at University of Buffalo. In 1926 he joined the Charles Ward Hall Co. (eventually called Hall Aluminum, which later became a part of Consolidated Aircraft). He moved to San Diego with the company in 1935 and received his 35-year service emblem last month.

In 1941 he transferred to Fort Worth division where he served in various capacities, returning to San Diego in 1945. He had been with accounting since that time and was property auditor at the time of his death.

He is survived by his wife, Clara F., and two sons, James H. Hamann, GD/Convair Dept. 48, and Clinton R. Hamann Jr.



FRIENDLY CHAT—Rep. Bob Wilson (R-San Diego) stresses point to GD/Convair's smiling general manager, Joe Famme, at recent joint Convair-National Steel Management Club meeting. Wilson later said he "had not given up hope for further F-106 contracts." Dinner meeting attracted 500.

General Dynamics NEWS

Published by General Dynamics Corporation, covering divisions based at San Diego and Pomona, Calif.; Fort Worth, Texas; and off-site bases; with editorial headquarters at San Diego 12, Calif., P.O. Box 1950, telephone CYpress 6-6611, ext. 1071, Logan Jenkins, editor-in-chief.

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Convair Editorial Offices, Bldg. 32, Plant 1, GD/Convair, Mail Zone 1-320, P.O. Box 1950, San Diego 12, Calif. Telephone CYpress 6-6611, ext. 1071. Staff: Grace Fath, Helen Pemberton, Jeff Fishel.

GD/Electronics (San Diego) news contacts: Info. Tech., Helen Wood, CY-8-8331, ext. 11; Milit. Prod., Betty Freely, CY-8-4641, ext. 1377.

Fort Worth Editorial Offices, Col. 72, Admin. Bldg., GD/Fort Worth, Mail Zone 0-50, P.O. Box 748, Fort Worth 1, Texas. Telephone PERshing 8-7311, ext. 2961. Staff: Dave Lewis, editor; Louise Sutton, Mary Beck.

Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone NAtional 9-5111, ext. 6226/5279. Staff: James Combs Jr., editor; Carol Colbert. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.



"WINTER EXPRESS"—Dubbed "Winter Wonderland Express" by ground crews during FAA slush tests at Atlantic City experimental center, Convair 880-M plows

through tons of man-made "winter" on runway to prove safe landing and takeoff conditions.

Service Rep Beginning Fifth Year Counseling Navy on R4Y Craft

One lone field service representative, supporting Convair-built planes, has been bypassed by the jet age.

Don Weaver, based at Naval Air Station, Patuxent River, Md., is the only GD/Convair customer service man still in the field with twin-engine transports and the only GD/Convair man still assigned to the Navy.

He is going into his fifth year with the Fleet Tactical Support Squadron One (VR-1) which flies R4Ys, Navy cargo transports. And there's every indication that the Navy has found Weaver's service so valuable that they will extend his duty another term, said L. J. Bordelon, chief of transport service.

In fact, he recently received a letter of commendation from Capt. G. F. Rice, commanding officer of Anacostia Naval Air Station, as well as expressions of appreciation from Capt. Edwin L. Kiem, commanding officer of VR-1.

Within the last two years all GD/Convair field service reps, except Weaver, have been withdrawn from naval bases. Last to come home were Bill Lewis from North Island NAS, Calif., and Bill Anthony from Pensacola, Fla. (Bill Copeland was last rep in the field with Convair-Liners. He returned this spring from General Motors headquarters, Detroit, Mich.)

At the height of the R4Y program in 1956, Convair reps were

stationed at Norfolk, Va., Glenview (near Chicago, Ill.), Patuxent River, Pensacola, and North Island.

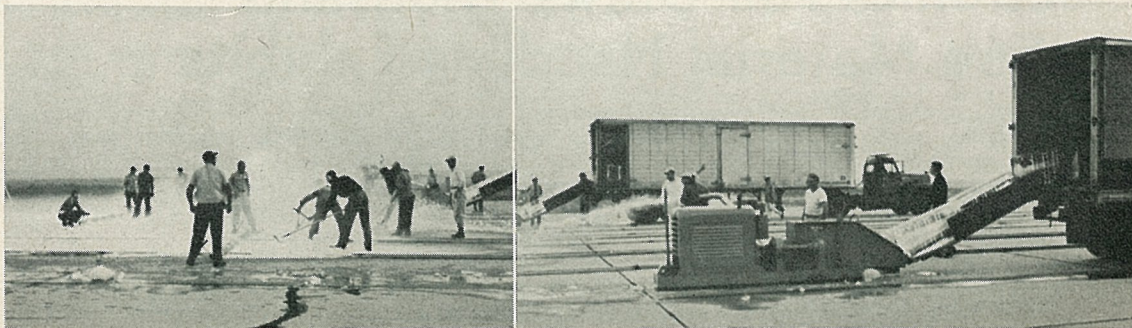
R4Ys went to VR-1 in 1955 and soon became the work horse of the squadron. It was the first squadron incorporated in the Naval Air Transport Service in early World War II days and is presently responsible for non-scheduled passenger and cargo airlift in direct response to Commander-in-Chief, U.S. Atlantic Fleet.

Operations of VR-1 hinge on the principle of "immediate service, anywhere," writes Weaver.

The eight, and sometimes as many as 15, R4Ys assigned to the squadron range to all parts of the country from Patuxent River. Most of the flying is along the East Coast with frequent routes to Newfoundland, Bermuda, Cuba, Puerto Rico. One R4Y is deployed now to South America to provide logistical support for a joint United States-South American naval exercise.

In the five years R4Ys have been based with the VR-1, they have helped amass over 126,000 flying hours and 26.7 million nautical miles. Each plane carries anywhere from 90,000 to 270,000 pounds of cargo and up to 3,000 passengers a month.

The squadron won the Airlant Safety Award for outstanding safety record in dual-piloted aircraft for 1960 and the Chief of Naval Operations' Safety Award for the four years prior to that.



ICE FROSTING—Crews got up early (4:30 a.m.) to lay down crushed ice layers for Federal Aviation Agency's 880-M in recent bad weather testing. Ice arrived by van in night; went down chutes into snow-making machines (at right); was shot through nozzles onto runway; leveled and spread by 115-man crew divided into teams.

880-M Plows Into Man-Made Slush To Plot FAA Safety Regulations

A Convair 880-M plowed through tons of slushy ice out of season early this month, helping Federal Aviation Agency lay down winter safety regulations for jet transports.

And the corresponding tons of data collected at the National Aviation Facilities Experimental Center at Atlantic City, N. J., is being analyzed for such questions as: when is it safe for commercial airliners to land and take off in slush or standing water?

Glen Arner, General Dynamics/Convair field service representative on the site during runs which stretched over a couple of weeks in late September and early October, reported that the 880-M came through in good condition. The craft itself belongs to FAA. It was flown from San Diego in mid-September to FAA headquarters, Oklahoma City, Okla.

It took lots of ice, a couple of thousand tons, to lay down the man-made slush on a section of NAFEC runway for the 20 controlled tests. Because of the detailed nature and vast amount of information needed, takeoffs and landings could not be done in actual winter conditions with both plane and instruments at the mercy of capricious weather.

Even the time of day mattered. Quiet of early mornings, when the wind was low and the sun wasn't high enough to start melting ice, found the huge plane skidding to braked stops in cascading sprays of flying slush.

Runs were made at three dif-

TEMPLE ATTENDS SAFETY CONGRESS

Fred Temple, General Dynamics/Fort Worth chief safety engineer, attended the National Safety Congress and American Society of Safety Engineers conventions held concurrently in Chicago Oct. 16-20.

ferent speeds—from about 135 to 185 miles an hour—in three different slush depths—one-half, one, and one-and-one-half inches.

It took 288 tons of ice to cover the 1,000-ft. long and 50-ft wide runway area (called "the pit") with an inch-and-a-half layer.

A fleet of vans hauled 300-lb. cakes of ice on location in the night. Ice slid down shoots into eight snow-making machines which can turn out 50 tons an hour. (The machines are commonly used in Texas farming areas for vegetable freezing.) Thoroughly crushed, ice was shot through nozzles, leveled, and raked. A crew of 115 men handled ice-laying operations in teams.

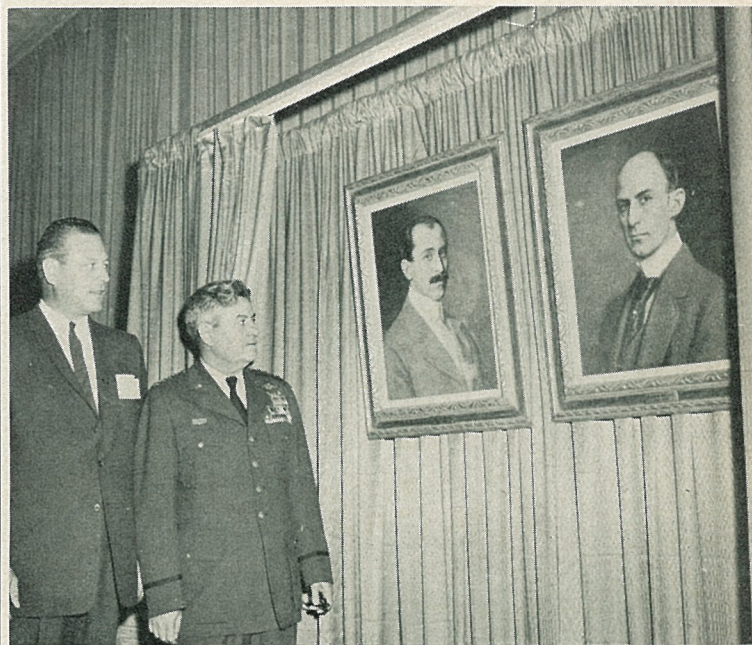
Entire program was jointly sponsored by FAA Aviation Research and Development Service, Flight Standards Service, and National Aeronautics and Space Administration.

Piloting the plane were Dick Richards, chief test pilot on the project and FAA engineering test pilot from Los Angeles, and Charles F. Stacy, chief 880 pilot for FAA from its air carrier operations division at Oklahoma City.

Results of data accumulated by cameras and test instruments within the 880-M will be compiled and studied as part of FAA's continuous flight safety testing program aimed at preventing jet transport accidents.



AMONG FRIENDS—R4Y forms bulky background for friendly group of VR-1 associates at Patuxent River NAS, Md. From left are Lt. William Harper, quality control officer; Cdr. Myron Marlay, maintenance officer; Don Weaver, GD/Convair rep; Capt. E. L. Kiem, commanding officer; Lcdr. Sam Hopkins, assistant maintenance officer.



FOR AF ACADEMY—On behalf of General Dynamics, C. Rhoades MacBride, executive vice president, left, recently presented two original oil paintings of Wright Brothers for hanging in Air Force Academy, Colorado Springs. Presentation was made at Air Force Association convention in Philadelphia to Gen. Curtis LeMay.



AT THE FAIR—Over 1,000 General Dynamics people from San Diego-located divisions viewed latest equipment and methods now on market for careful handling of materials at one-day Electronics Handling Fair, sponsored by General Dynamics/Electronics.

Electronics Fair Draws Thousand To See Material Handling Exhibits

Modern equipment for protection of electronic parts was on display this month (Oct. 12) at San Diego at a one-day Electronics Handling Fair, first of its type sponsored by Military Products Division of General Dynamics/Electronics.

Over a thousand General Dynamics people from three San Diego divisions, whose interests are concerned mainly with proper handling of materials, filed through the display area on Bldg. 4 mezzanine, GD/Convair Plant 1, to see exhibits of ten vendor representatives. All companies showing products were selected by GD/Electronics production engineering as most representative of latest-type handling equipment for specific purposes.

"We wanted as many as possible to have a chance to see new kinds of materials and methods available for protecting products," said J. P. Morris, manager of GD/Electronics production en-

gineering, sponsoring group.

The fair was opened to all operations, engineering, quality control people from GD/Convair, Astronautics, Electronics — both Military Products and Information Technology Divisions.

"This is but one phase of our ever-continuing campaign to improve our material handling methods," pointed out H. L. Gates, operations manager of GD/Electronics.

"We build high-quality products, and we want to keep them that way. If we don't take pains to preserve them in storage and during transit, we lose all we've gained. And, as our products become more and more refined, thereby requiring a higher degree of reliability and quality control, careful handling becomes increasingly important."

Items such as disposable plastic gloves and aprons which tear off huge rolls; plastic "tote" boxes—containers of all sizes and

shapes — bags, envelopes; file cases with separately lined compartments; "clean" room equipment; soldering equipment for encapsulation were prominent among displays.

Represented at the Fair were: C. S. Goodale Co., Winn Supply Co., both of San Diego; Storage Rack Co., Los Angeles; Specialty Converting, Inc., El Monte; DOLLIVER & Co., Los Angeles; Claude Michael, Inc., Glendale; Electronic Engineering Co. of California, Santa Ana; Agnew-Higgins Co., Stanton, Calif.; Cashin-Tipton & Associates, San Diego; Spaulding Fibre Co., Inc., Tonawanda, N.Y.

A. L. Weinstein of GD/Electronics production engineering made arrangements for the exhibits as Fair coordinator.

QUALITY CONTROL TALKS SCHEDULED

Three General Dynamics quality control experts will take part in the 11th national conference, Aircraft and Missile Division, American Society for Quality Control in Los Angeles, Nov. 9-10.

J. Y. McClure, General Dynamics director of reliability and quality control, will speak on "Quality Control from the Management Viewpoint," at the Nov. 9 production quality control session.

David Archibald, GD/Astronautics manager of quality control, will moderate the design reliability session the same day. P. I. Harr, reliability control director at GD/Astro, will talk on "Test Control" at the Friday field service maintainability session.

15,000 See Spacecraft That Circled Earth

Over 15,000 visitors, plus as many or more employees, viewed a special display of a Mercury spacecraft this month at General Dynamics/Astronautics in San Diego.

The spacecraft is a "veteran" of two launchings by Atlas. On April 25 it was recovered after a successful separation from a missile destroyed 40 seconds after lift-off due to a programmer failure. On Sept. 13 Atlas 88-D, launched by an Astronautics crew at Cape Canaveral, sent the spacecraft on a 109-minute flight around the earth. It was recovered from the Atlantic.

Astronautics installed the spacecraft in Bldg. 2 lobby (after a bit of doing which included removing and replacing two glass panes and a steel beam) and invited the public to view it after normal work hours.

Wesley Brenton of NASA presided during public displays and helped play a special continuous tape recording of countdown talk during launch of the missile. The entire tape was narrated, save for actual crew voices, by Bill McGaw of Astro's motion picture and television section.

One unusual portion of the display, never seen by the public before, involved color weather reconnaissance shots taken from

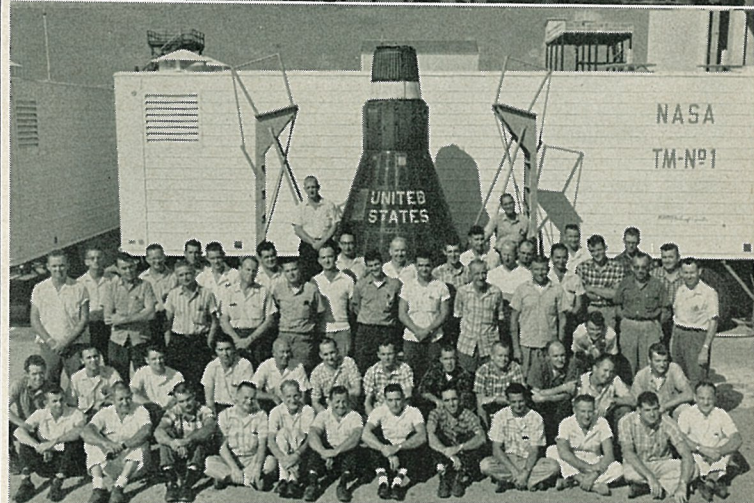
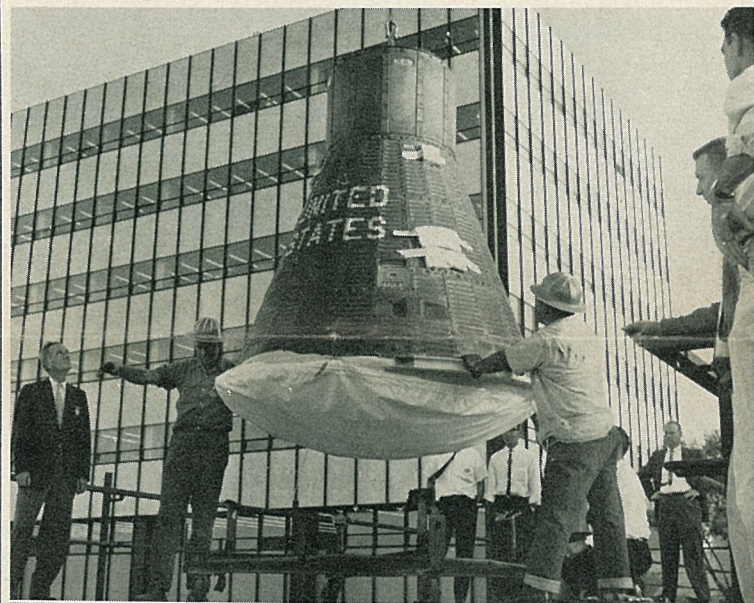
the capsule 100 miles above the earth. Prints, made by Astro's still photographic laboratory, showed the "eye" of Hurricane Esther over the Atlantic, the Sahara Desert, Indian Ocean with monsoon clouds and the west coast of Africa.

Also on display was a scale model of the Project Mercury Control Center at Cape Canaveral, designed and built by General Dynamics/Electronics, including an eight by 26-foot wall map and 12 display-consoles.

Security Society Headed by Higgins

George D. Higgins, General Dynamics director of industrial security, this month was elected president of the American Society for Industrial Security during the annual national seminar in Detroit.

Higgins, who has held posts of secretary and treasurer in past years, was a member of the society's founding committee in 1955. Eric Barr, manager of industrial security for Electric Boat Division, is a former president and past chairman of the board. The organization lists 2,500 members in 58 chapters across the country, with representatives in all major industries.



CIRCLER—Atlas-Mercury Spacecraft that circled earth Sept. 13 was displayed at GD/Astro plant in San Diego this month. In top photo, it is lowered onto dolly. Below, GD/Astro crew at Complex 14, Cape Canaveral, pose after it was retrieved from Atlantic.

Delta Will Start 880 Service From San Diego East Next Week

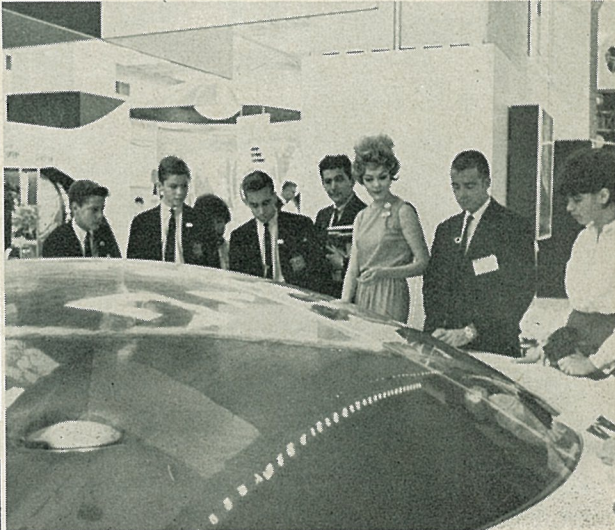
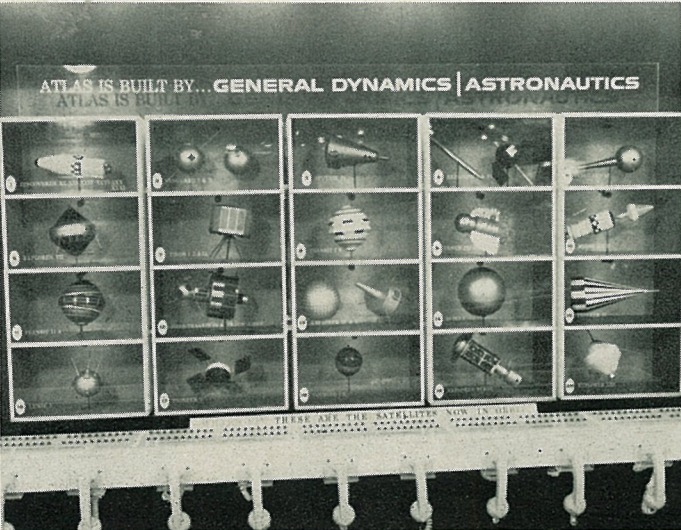
Convair 880 passenger service will connect San Diego to southeastern points this weekend when Delta Air Lines begins flying a Convair jet airliner over a new schedule Oct. 29.

The 880 schedule will provide San Diego with service to Dallas, Fort Worth, Texas, and Orlando, Fla. Connections at Dallas and Fort Worth will be available for New Orleans, Atlanta, and Birmingham-bound passengers.

Eastbound, the 880 leaves daily at 10:10 a.m., stops in Los An-

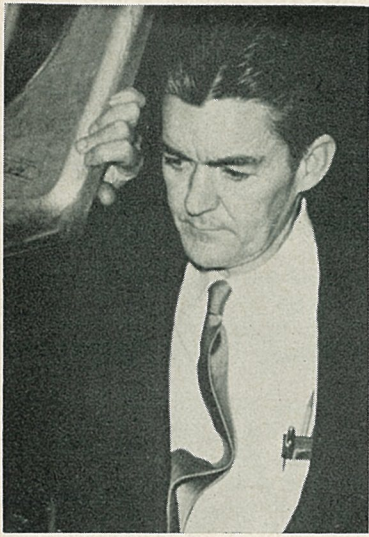
geles, then flies nonstop to Dallas, arriving at 4:20 CST, and reaches Orlando at 7:52 p.m. EST. Westbound, the flight leaves New Orleans at 7:10 a.m. CST, Fort Worth at 8:50 a.m. CST, and reaches San Diego at 9:40 a.m. PST.

Delta Air Lines was the first carrier to place Convair 880s in passenger service on May 15, 1960. It now has 12 Convair 880s operating over its network and another four on order for 1962 delivery.



IMPRESSIVE—GD/Astro exhibits at American Rocket Society convention in New York City "wowed" thousands and were often surrounded by several rows of curious. At left, visitors try out "robot psychologists" while in center are models of

U. S. satellites now in orbit. (Recorded facts on each could be learned by picking up a telephone!) At right is view of space "pin-ball" machine, one of most popular displays.



LOSS — Frank Sinclair, long-times sales executive at San Diego, died suddenly Oct. 12.

FRANK D. SINCLAIR, PILOT AND SALES EXECUTIVE, DIES

Frank D. Sinclair, assistant manager of commercial sales for General Dynamics at San Diego, veteran Air Corps and civilian pilot and widely traveled sales executive, died suddenly Oct. 12 at San Diego.

He leaves his wife, Laura Jane, two daughters, Candace and Victoria, and a son, Frank D. Jr.

Sinclair joined Convair in 1947, bringing with him a broad background of aviation experience and a colorful career as an aviator. He was born in Wilkinsburg, Pa., educated at University of Detroit, and graduated from the Air Corps Advanced Flying School, Kelly Field, Texas, in 1932. He served two years as a second lieutenant, duty including the Canal Zone. He left the service to become chief flight instructor for the Colombian government.

Returning to the States in 1935 he joined Seversky Aircraft as chief pilot, selling and demonstrating new aircraft. Later, with Douglas Aircraft (1940-45) he was loaned for a year to the Government of China (1942) to advise Dr. T. V. Soong, then foreign minister, on equipment for the Chinese Air Force. During that tour he made two trips to China and among other tasks surveyed transportation routes over the "Hump" and made recommendations for increased payloads.

Following a year with TWA Sinclair joined Convair as a sales representative and was intimately associated with sales efforts on Model 240, 340 and 440 programs, both at home and abroad.

B-58 No. 3 'Retired' To Chanute Duty

B-58 No. 3, which made its maiden flight May 6, 1957, has retired to Chanute AFB, where it will be used for maintenance training purposes.

The third test Hustler to be flown, No. 3 was used primarily for stability and control testing. It was also used for testing of components in the bomb-nav system and autopilot before being put in service at Edwards AFB in September, 1959.

At Edwards, No. 3 was used in production boom data tests and non-frangible wheel tests.

Venus Flight To Use Atlas

Plans for utilizing an Atlas-Agena B launch vehicle for sending a Mariner spacecraft on a flight to the vicinity of Venus have been announced by National Aeronautics and Space Administration (NASA).

Slated for "mid-1962" the launch will occur when the earth and Venus are in the most favorable positions. This flight will provide an early test of basic equipment which will be used in later interplanetary flights.

Earlier, an Atlas-Centaur launch vehicle had been scheduled for this space probe. However, NASA indicated a change was being made in the interest of increased reliability to be expected from the greater number of Atlas-Agena B rockets which will have been fired before the Venus flight.

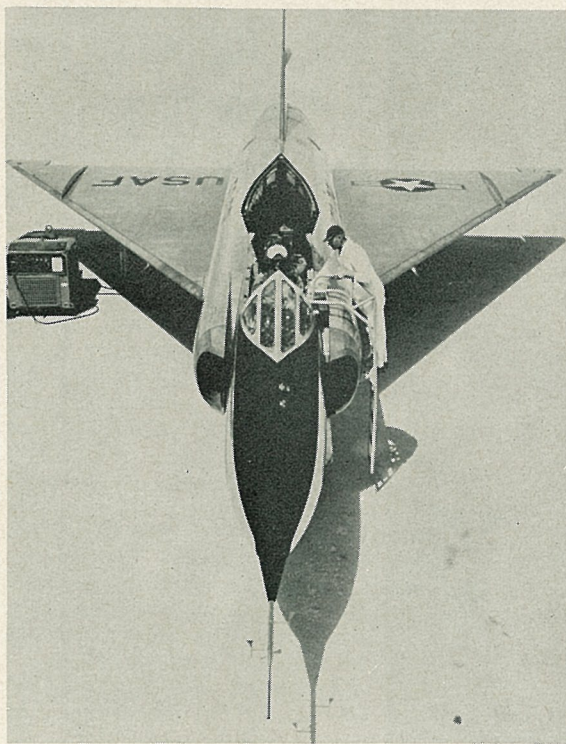
General Dynamics/Astronautics manufactures the Atlas launch vehicle for NASA and also builds Centaur.

Weighing about 400 pounds, the Mariner spacecraft may carry such equipment as that for investigating magnetic fields in space through a fluxgate magnetometer; for conducting radiation experiments to detect and count energetic particles from the sun and from outside the solar system; or a micrometeoroid detector and a radiometer to scan the surface of Venus for temperature distribution.

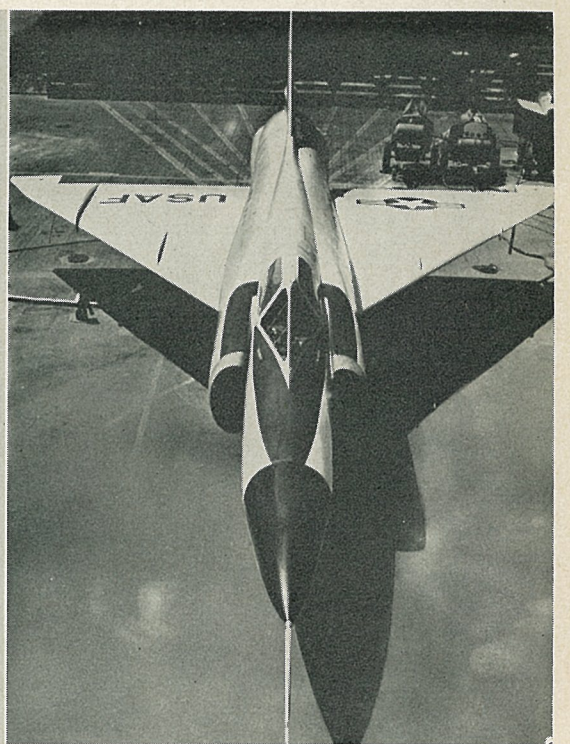
GD/Astro Man Cited For Honors Course

Dale G. Walton, major, USAR, of General Dynamics/Astronautics has been cited by R/Adm. R. E. Rose, USN, commandant of the Industrial College of the Armed Forces for completing that institution's correspondence course with honors.

The course, "The Economics of National Security," is based on a curriculum offered for active regular and reserve officers, government officials and selected civilians.



SPEEDY SHAPE—Prototype YF-102, left above, fell short of Mach 1, but when pinch-waist "figure" was adopted (right above) plane smoothly passed sound barrier on second flight.



Principle of 'Marilyn Monroe' Figure Applied to F-102, Put it Past Mach 1

(No. 70 in a continuing history of General Dynamics products deals with speed problem that led to "Marilyn Monroe" shape for YF-102 delta.)

Hasty post-war demobilization (1946-47) left the country almost undefended from air attack. There were only a few obsolescent coastal radar installations, one squadron of P-47 day fighters, one of P-61 night fighters.

Events abroad beginning in late 1947 (especially the appearance of the Russian TU-4 bomber) showed the need for a defense able to meet intercontinental attack by high-performance aircraft. An interim system was organized around the F-89C and F-94B all-weather interceptors and the "Lash-up" radar network. To develop a better defense by the target year 1954, the aircraft and electronic indus-

tries were asked to participate in a conference at Air Force headquarters in May, 1949.

Here a new approach generated by Gens. Muir S. Fairchild and Gordon P. Saville was introduced. Instead of issuing rigid specifications defining the equipment wanted, the Air Force stated its problem and asked industry to submit ideas leading to an integrated "weapons system." It was agreed that development of the electronics for a new interceptor would take longest and should start first. A competition led to selection of a Hughes Aircraft Co. design in May, 1950. The airframe competition followed at once. In June, 1951, Convair, Lockheed, and Republic were chosen to proceed with preliminary development. In September the Convair delta design was picked for the job and designated F-102.

The system originally was to consist of an airframe powered with the projected Wright J-67 engine (expected to pack a thrust of some 15,000 pounds) and the Hughes MA-1 fire-control equipment, so sophisticated it could take over most pilot functions, the Hughes Falcon (GAR-1) homing missile, and a second battery of folding-fin rockets. It soon was seen that not all the advanced features could be developed in time, and a lesser interim program was substituted. This included the F-102A plane, powered with the smaller Pratt & Whitney J-57 engine, and the Hughes MG-3 system, a partial development of the MA-1. The MG-3 could locate the target at long range, direct the pilot on the correct lead-collision course, and at the proper moment prepare and fire missiles or rockets automatically.

Outwardly, the F-102A looked like a big brother of the XF-92A, except for a slim nose and lateral air intakes flanking the cockpit. It was far different structurally — a strong skeleton of milled aluminum spars and longerons, covered with aluminum skins. The plane was designed to carry

its full load internally: fuel in the wing spaces, more than three-quarters of a ton of electronic gear in the fuselage, and the Falcon missile in concealed ventral bays. Rockets were fitted into channels contained in fast-acting missile bay doors.

Engineering on a preliminary order for the ten YF-102s began in April, 1952, and the first plane was completed Oct. 15, 1953, making its maiden flight Oct. 24 at Edwards AFB, Calif. Engineers already were redesigning the fuselage, however. It had been discovered with dismay, earlier in the year, that the YF-102 would not be able to push past the sound barrier. This was demonstrated by a test program with wind tunnel and rocket-powered models. In hopes of saving the plane, Convair and Air Force engineers decided to apply "area rule," a principle discovered in 1952 by Richard T. Whitcomb, NACA aerodynamicist.

Whitcomb's studies indicated that in slender, short-winged aircraft the drag rise near Mach 1 depends primarily on the distribution of cross-sectional areas as measured along the plane's axis from nose to tail. Where the rate of change in area is rapid, stronger shock waves (and increased drag) result. Whitcomb found he could greatly reduce transonic drag by indenting the plane's body where the wings were largest. This prevented rapid change in the total cross-sectional area.

The third YF-102 on the line was modified according to these principles. Its waist was pinched along the wing and its nose was slimmed and lengthened. Additionally, the plane was lightened by whittling away some of its excess structures (no longer needed, due to substitution of the light J-57 engine for the J-67 originally planned). The modified plane, redesignated the YF-102A, had a shakedown flight Dec. 20, 1954, and the following day easily exceeded Mach 1 in level flight.



AA "STUDENTS"—First American Airlines group completing airlines' own 990 orientation course held at GD/Convair plant were (from left) H. L. Patterson, Tulsa, Okla.; D. Breeding, Washington, D.C.; C. Raffey, Boston, Mass.; L. Ekberg, Cincinnati, Ohio; H. Goers, St. Louis, Mo.; B. Naylor, Newark, N.J.; J. D'Angeli, Tulsa; H. Brockel, La Guardia Field, N.Y.; G. Crozier, Idlewild, N.Y.; O. Gilbert, La Guardia.

American Airlines 'Graduates' Key Personnel in 990 Course

Second in a series of American Airlines "seminars," taught by their own instructors at General Dynamics/Convair, will end today (Oct. 25).

Before the end of December, five groups of key personnel from all points of the American Airlines system will be at the San Diego plant for "graduate" work on the Convair 990.

The capsule courses, called American Airlines Management Orientation, are bringing maintenance, engineering, and provisioning managers to San Diego to see the actual plane, in production and on the flight line. GD/Convair customer service is standing by to assist in any way possible, making plant facilities available and supplying specialists for information on any particular subject.

Program coordinators and lec-

turers of this series are H. L. Patterson and J. D'Angeli of American Airlines training section, who have conducted ground school courses at AA's main base, Tulsa, Okla. Both received their initial 990 training in GD/Convair customer service maintenance courses. Most of the men attending the three-day courses have already received American Airlines classroom training.

Several hundred AA personnel already have passed through the GD/Convair standard maintenance courses during the last year. This GD/Convair-provided portion of 990 training has been completed, however, GD/Convair instructors will be on hand to assist in any way needed during the American Airlines training sessions at San Diego, stressed L. J. Bordelon, chief of transport service.



"If you'll recall . . . the agreement was for better or for worse . . ."



PICNICKERS—GD/Electronics Info. Tech. men stationed at Dayton, O. are shown at recent product service picnic. Back row: Ken Blauvelt, Bill Kizer, Bob Hayde, Nick Diavatis; front: Charles Garland, Ellis Collier, Paul Tyler.

Daisy II Team Soon to Start Second Year Based at Dayton

A small General Dynamics team next month will celebrate its first "birthday" on station at Dayton, Ohio, assisting in maintenance of DAISY II, data handling system built at San Diego for Air Force use at Wright Air Development Division.

Ellis Collier heads a team of seven customer engineers from Information Technology Division of General Dynamics/Electronics assigned to the Ultimate Data Processing System at Wright's Structures and Facilities Laboratories.

Others are Bill Kizer, Bob Hayde, Paul Tyler, Ken Blauvelt, Nick Diavatis, and Charles Garland.

Collier and Kizer, former GD/Convair electronics engineers, went to WADD with DAISY II (Data Acquisition and Interpretation System) components when they moved out of San Diego electronics factory last November. Hayde and Tyler of Information Technology were assigned to the project six months ago.

Diavatis, Blauvelt, and Garland were hired at Dayton.

Development of DAISY II began about three years ago under a \$2 million contract from the Air Force. First components of the highly-refined data handling system began moving to WADD

in October of 1959; system was accepted by the Air Force November, 1960.

Research group engineer who directed designing of the system was Stanley Rogers, now Information Technology data systems manager. Rogers transferred from Convair division in March of this year.

DAISY II is in use at WADD gathering and recording information during high temperature structural tests of advanced aircraft and space vehicles.

The system, a follow-on to the initial DAISY I system designed at Convair and installed at the high temperature structures research laboratory, provides instantaneous information on reaction of parts to extreme temperatures and stresses during testing.

It collects information from 2,048 pickups on test specimens at a rate of 120,000 readings a second. It would take months to process information which DAISY II records in a day.

According to C. R. McGehee, manager of product service department of Information Technology Division, headquartered at San Diego, the maintenance contract, under which Collier and his team are assigned to WADD, probably will continue for the next year.

Divisions Award Scholarships To 31 San Diego State Students

Thirty-one San Diego State College students have been awarded scholarships for the current semester by General Dynamics/Convair and General Dynamics/Astronautics.

Scholarships are \$75 each. They are awarded on basis of aptitude, scholarship, and likelihood of success in a chosen field. They are renewable each semester of the undergraduate program if scholarship standards are maintained.

The program is administered by educational services at each division.

Scholarships went to:

General Dynamics/Convair—Larry E. Bennett, chemistry; Howard J. Bryant, physics; Carolyn S. Calhoun, mathematics; Martin D. Eichman, accounting; Dale E. Eyman, business management; Richard Ferrara, physics; Roland H. Fisher, mathematics; Eric J. Flourie, chemistry; Robert Allan Hartmann, physics; Robert H. Leatherwood, engineering; Allan D. Lemaire, civil engineering; James K. Lisee, personnel management; Arnold C. Nilson, physical science; Jon A. Orvick, chemistry; Louis L. Pechi, engineering; Michael F. Richardson, business management; Michael H. Spritzer, engineering; Rory J. Thompson, mathematics; Bruce H. Weber, chemistry.

General Dynamics/Astronautics—Neville G. Alexander, accounting; Fred O. Andrews Jr., accounting; Robert Becker, chemistry; Jean G. Collier, personnel management; Douglas F. Davis, physics; John J. Emrich, chemistry; William A. Hines, physics; William Y. C. Howe, engineering; Stephen L. Pentoney, industrial management; Robert R. Smith, mathematics; John K. Ware, mathematics; Richard S. Wayne, chemistry.

INFO TECH WIVES MEET TOMORROW

Information Technology Wives Club (GD/Electronics) will hold its monthly meeting tomorrow (Nov. 9). All wives are invited. November hostesses who may be called for luncheon reservations are: Mrs. Richard Barnett, BR-3-4451; Mrs. Curtis A. Gleason, AC-3-9738.

Car Clubbers Set Meeting For Nov. 1

Plans for CRA Sports Car Club's "Field Day '61" will be cemented Nov. 1 at the regular monthly meeting, 7:30 p.m. in the cafeteria executive dining room, Pacific Hwy.

Presiding at the meeting will be the club's new officers recently installed at Valle's Restaurant.

Commissioner Gerry Wright said "Field Day '61" should be biggest yet with over 100 entries and 300 spectators expected.

Slated Nov. 19 on Brown Field NAS, events will include time trials, a slalom, acceleration and braking, and a gymkhana.

Additional information and entry blanks can be obtained by calling Tom Kienholz, field marshal, at HO-5-1098, or write "Field Day '61," 6309 Lake Kathleen Ave., San Diego 19, Calif.

Cafeteria Streamlined

After a three-week diet of sandwiches and easily-transferable side-dishes, GD/Astro and Convair employees at Plant 2 are being served by a completely renovated, streamlined kitchen.

Plant 2 cafeteria kitchen, closed Oct. 9, reopened Monday for normal business.

GD/Convair plant engineering, under an Air Force contract, coordinated and supervised installation of new stainless-steel sinks, four huge ovens, a large garbage disposal and provided a sparkling green and white paint job.

Al Damarus, maintenance foreman, said modern equipment should facilitate greater speed, ease and efficiency in cafeteria handling and service.

Electrical Engineers Form San Diego Group

J. W. Murphy of Information Technology Division of General Dynamics/Electronics presided at the organizational meeting of a San Diego Area group of Electrical Maintenance Engineers Association this month.

Other General Dynamics men involved in planning for the San Diego chapter included Lawrence C. McEntee of GD/Convair.

Pacific Telephone Co. provided an "Adventures in Sound" program for the initial meeting Oct. 18 at Streamliner Restaurant.

Membership of EMEA is open to individuals actively engaged in design, engineering, use, operation, maintenance, sale, or manufacture of electrical and allied equipment, and application of electricity in industry.

Murphy, maintenance foreman, may be contacted at CY-8-8331 for more information.

CRA Golfers Tee Off On Coronado Fairways

"Pros and duffers" from GD/Convair can sign up Oct. 25-30 for CRA's next golf competition on the Coronado course Nov. 4-5.

Turkeys will go to winners in the links meet.

Commissioner Ken Wulfemeyer said all interested persons should call ext. 1705, Plant 1, for verification.

At El Camino, Oct. 7-8, Ray Minutelli (Dept. 6) shot 76 to take first place in low gross, 0-15 division; and Elsworth Henderson (Dept. 97) carded a low

SINGERS SOLICITED FOR MALE QUARTET

Men with an urge to sing are urged to attend a tryout session Monday (Oct. 30) for the first CRA-sponsored male quartet, Bill Vogel, spokesman, announced.

Sessions will be conducted in CRA Clubhouse beginning at 7:30 p.m.

"We hope to select eight voices, two for each part, who can sing anything from Bach to be-bop," Vogel said. "This will definitely not be a barbershop quartet," he stressed.

Vogel, former Choralaire director, said intensive plans are being made for quartet singing engagements, both in the San Diego area and at other General Dynamics organizations.

GD/CONVAIR MAN LODGE SPEAKER

J. E. McCann of General Dynamics/Convair was principal speaker at the annual Prince Hall Day observance Oct. 15 at a district gathering of Prince Hall Masonic Lodge members in San Diego.

McCann, Past Master of Gibraltar Lodge No. 58 in San Diego, chose "Our Task" as title of his talk at the commemoration of the 177th anniversary of the founding of Masonry for men of color in America. At least 50 GD/Convair and Astro men are numbered among the more than 500 in the San Diego lodge.

As office services assistant supervisor, McCann directs GD/Convair mailroom operations.

Jim Halfacre Guns Way to Double Win

Jim Halfacre (Dept. 180) gunned his way to a double sweep Oct. 8 in the .22 caliber Police course and the short National match at the CRA Pistol Club meet.

Scores of 287 and 284 by Halfacre were sufficient to dispense with competition.

Carl Hornburg (Dept. 139) placed twice taking second in Police action and fourth in National shooting. Another double winner, W. G. Walker (Dept. 6), grabbed third in master's and second in National competition.

Third place in National went to E. E. Bickar (Dept. 215).

net score of 72 to walk away with winning honors in the same division.

Runners-up in 0-15 division included: Ralph Way (Dept. 400) 80, low gross; Bob Vones (Dept. 400) 89, low gross; D. Minor (Dept. 6) 76, low net; and Glen Grantham (Dept. 133) 78, low net.

Action in 16-22 bracket saw John Evans (Dept. 25) stroke 88 for first place in low gross and Truman Solberg (Dept. 91) tied Claude Lepper (Dept. 115) with a score of 71 for first in low net. Wayne Turner (Dept. 3) and Jack Santone (Dept. 91) shot 91s to tie for second in low gross while Carl Bieberdorf (Dept. 6) hit 73 for third place in low net.

D. Trepanier (Dept. 192) shot 98 winning in the 23 and over division, low gross, and Bob Buchholz carded a 73 for first place in low net, same division. Runners-up were: Tobe Hunley (Dept. 400), 99, low gross; Bud Buffet (Dept. 218), 100, low gross; Ray Crothers (Dept. 400), 74, low net; and Fred Desrosiers (Dept. 140), 75, low net.

Bowmen Slate Turkey Shoot

Luck, not skill, will determine turkey and ham winners in GD/Convair Archery Club's annual turkey shoot Nov. 12, according to Commissioner Al Phipps.

Slated for 9:30 a.m. on Balboa Park's field range, the shoot will feature novelty scoring whereby 28 targets will have sealed envelopes giving individual scoring rules.

Phipps said "some scores may be determined by bull's-eyes and then some by number of times a shooter hits the target's outer rim. This way everyone, expert and novice, has a chance to qualify."

Included in the day's festivities will be a turkey drawing.

In other Archery Club action, Phipps and Harry Ross competed Oct. 21-22 in the California State Broadhead tournament at Pomona.

Photog Display Ends; Kodak Travelog Set

GD/Convair's Camera Club will wind up their month-long open house Sunday (Oct. 29) at Photo Arts Bldg., Balboa Park.

Combining print display and model shooting, club members are still urged to bring their shots to the exhibition's finale.

In other activity, CRA photogs will join with the Southern California Association of Camera Clubs in sponsoring a Kodak company travelog, "Photogenic America" Nov. 1, Russ Auditorium, 8 p.m.

Ainsworth said, "The photographs depict America's varied natural beauties and the lives of her people."

Seats are free and will be on a "first-come, first-served" basis.



TELECOM VPs—Telephone equipment from past to present served as props for photo of five new vice presidents of GD/Telecommunication. From left, T. C. Thompson, vp-sales; Robert R. Dobbin, vp-engineering; Gordon G. Hoit, senior vp and consultant to president; Charles W. Pritchard, vp-sales financing; Howard G. Strassner, vp-manufacturing.

Aged Wooden Ruler Retired, at Last

Jane Dunn, GD/Convair cashier, could hardly be accused of carelessness with company supplies!

Last week, she relinquished the wooden 12-inch ruler that has served her during over 35 years with the company.

Admitting that the ruler had finally seen its day, Jane asked—and slightly hesitantly even then—if she might have a new one. It had been issued her when she joined Consolidated Aircraft in Buffalo, N. Y., in 1924, and came along with Jane when she trekked with the company to San Diego in 1935.

Garden Club Fall Show Opens Oct. 29 at Park

Turkeys for thumbs—green thumbs that is—will be extended to division winners in the GD/Convair Garden Club's annual fall show Sunday (Oct. 29), Floral Association Bldg., Balboa Park. Doors open to the public at 1 p.m.

This year's show will include fall roses besides usual chrysanthemum entries.

Interested flower growers may enter their blooms on day of show until 11 a.m. No entries will be accepted after deadline time,

'Goblins, Witches' To Invade Iceland For Annual Party

Goblins, witches, black cats and all manner of weird creatures will take to the ice for ARA-CRA Ice Skating Club's annual Halloween costume party tomorrow (Oct. 26).

Slated for Iceland, 6055 Lake Murray Blvd., festivities will last from 6:30 to 8 p.m.

ARA Commissioner Bud Davies and CRA Commissioner Martha Woodberry invited all club members and interested "trick or treaters" to join the party.

Activities during the evening will include a peanut race, balloon race, musical chairs and a Grand March.

Prizes will be awarded for best costume in both junior and senior groups. Game winners will also receive awards.

E. L. Zimmerman, commissioner, warned.

Classification sheets and entry rules can be obtained at employee services, Bldg. 32, Plant 1.

Following are divisions and classes of competition:

Chrysanthemums
DIVISION I—One bloom, large or medium: Class 1, white or ivory; Class 2, pink; Class 3, red; Class 4, bronze or orange; Class 5, yellow; Class 6, lavender or purple.

DIVISION II—Three blooms, large or medium: Class 7, white or ivory; Class 8, pink; Class 9, red; Class 10, bronze or orange; Class 11, yellow; Class 12, lavender or purple.

DIVISION III—Pompons, three stems: Class 13, white or ivory; Class 14, pink; Class 15, red; Class 16, bronze or orange; Class 17, yellow; Class 18, lavender or purple.

DIVISION IV—Button Mums: Class 19, one stem, any color; Class 20, three stems, one color; Class 21, six stems, three mixed colors.

Arrangements
DIVISION V—Class 1, miniatures, less than 4" high or 3" wide; Class 2, low arrangements, less than 14" high or 12" wide; Class 3, medium arrangements, less than 20" high or 18" wide; Class 4, tall arrangements, over 20" high and/or 18" wide; Class 5, dry arrangements, under 18" high; Class 6, dry arrangements, over 18" high.

Corsages
DIVISION VI—Class 1, corsages made of tropical flowers; Class 2, corsages made of chrysanthemums; Class 3, corsages made of flowers other than above.

Children
DIVISION VII—Class 1, 5-11 years of age; Class 2, 12-16 years of age.

Roses
DIVISION VIII—Class 1, red; Class 2, yellow; Class 3, pink; Class 4, white; Class 5, orange; Class 6, mauve.

Turkeys will be awarded to winners in the following manner: Division I, best single bloom class 1-6; Division II, best three blooms class 7-12; Division III, best three stems of pompons, class 13-18; Division IV, best entry of button mums class 19-21; Division V, best arrangement class 2-6 only; Division VI, best corsage; Division VIII, best rose in show.



BIG GAME—Curious visitor (right background) watches while Lee Stamper, general foreman of Convair plastics, metalbond, trim, shows pert Margie Roberts use of .308 Remington rifle, one of many prizes offered by Gun Club in its annual "big game hunt." Contest is open to GD/Convair, Astro and off-site employees.

Sports & Recreation

Square Dancers Square Off For Big Hoedown-Jamboree

Some lively "steppin' and whirlin'" will take place during the All-General Dynamics Hoedown-Jamboree Saturday (Oct. 28) at American Legion Hall, 4061 Fairmount Ave.

Convair Hoedowners will host 80 square dancers from Pomona

and 50 from Astronautics at the yearly "shindig."

Dinner will be served at 6:30 p.m. with dancing starting at 8 p.m.

Maury Scholz, CRA commissioner, urged all persons interested in square dancing, whether club members or not, to join the group for squares at 8 p.m.

Callers from Convair, Pomona and Astro will be on hand for do-se-do's with live music furnished by the "Square Notes," local western band.

Special attraction at intermission will feature the "Wheelacades," under direction of Lee Wadell, who have gained national recognition for their wheel-chair routines.

Tennis Club Slates Tourney

Reactivated, revitalized and reorganized, the GD/Convair tennis club will sponsor a "hodge-podge" tournament Nov. 18 at Morley Field.

Pete Beyrer, CRA commissioner, said the "hodge-podge" concept shifts players from team to team and therefore gives everyone a chance to win.

Thanksgiving turkeys will be awarded winners.

Tournament directors Stan Griffin and Dennis Sealey said there will not be an entrance fee and tournament balls will be furnished by CRA.

Players must be on courts at 9:30 a.m. with action getting under way at 10 a.m.

Beyrer urged all GD/Convair employees and dependents "who want a good time and possibly, a turkey" to call employee services, ext. 1245, Plant 1, and leave name, department and phone extension.

ROAD RUNNERS CARAVAN TO HENSHAW, PALOMAR

Fourteen trailers caravaned Oct. 13 to Lake Henshaw, Indian Flat, Warner Hot Springs, and Mt. Palomar for a three-day Road Runners outing. Gathering around the campfire after a day's fishing and exploring, Road Runners joined in a potluck dinner and then viewed Pete Peterson's (Dept. 31) New England trip slides.

CRA Calendar

(Convair Recreation Association has some 40 activities in operation. For information on Convair sports, call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

ARCHERY—Turkey shoot Nov. 12, 9:30 a.m., Balboa Park range.

BRIDGE CLUB—Weekly sessions each Tuesday, 7:30 p.m., Barcelona Hotel, 326 Juniper St.

CAMERA CLUB—Meeting Nov. 13, 7:30 p.m., Photo Arts Bldg., Balboa Park. Open house ends Oct. 29.

GARDEN CLUB—Fall flower show Sunday (Oct. 29), Floral Assoc. Bldg., Balboa Park. Open to public at 1 p.m.

GOLF—Entries open until Oct. 30 for CRA sweeps, Coronado, Nov. 4-5. Call ext. 1705, Plant 1.

ICE SKATING—Halloween costume party tomorrow (Oct. 26), 6:30-8 p.m., Iceland, 6055 Lake Murray Blvd.

JUDO—Instruction each Thursday, 7 p.m., CRA Clubhouse on Pacific Hwy.

MALE QUARTET—Organization meeting Monday (Oct. 30), 7:30 p.m., CRA Clubhouse.

MODEL RAILROAD—Meetings each Friday, 7:30 p.m., House of Charm, Balboa Park.

MOVIES—Reduced price movies each Friday, Saturday, Sunday at Adams Theater, 3325 Adams Ave. Admission: adults, 50¢; children under 12 free if accompanied by adult.

PISTOL CLUB—Next shoot Nov. 12, 9 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB—Meeting tomorrow (Oct. 26), 8 p.m., Harbor Drive headquarters.

SKI CLUB—First meeting of season Nov. 7, 8 p.m., Convair cafeteria executive dining room, Pacific Hwy.

SPORTS CAR CLUB—Meeting Nov. 1, 7:30 p.m., Convair cafeteria executive dining room, Pacific Hwy. "Field Day" event Nov. 19, Brown Field.

SQUARE DANCING—All-General Dynamics Hoedown and Jamboree hosted by Convair Hoedowners Oct. 28, American Legion Hall, 4061 Fairmount Ave. Dinner, 6:30 p.m.; dancing, 8 p.m.

TENNIS—Entries open for "hodge-podge" CRA tournament Nov. 18, 9:30 a.m., Morley Field, Balboa Park. Call Pete Beyrer, ext. 1245, Plant 1, to register.

WOMEN'S ACTIVITIES—Registration now open for advanced charm school beginning Nov. 8. Register at employee services, Bldg. 32, Plant 1, ext. 1245.



LOVELY "LADIES"—Carolyn Merriam examines unusual Cattelya orchid "Abigail Anderson" as prelude to first ARA Garden Club meeting. CRA Garden club, under Commissioner E. L. Zimmerman, helped group organize.

CRA Charm School Registration Open; First Class Set for Nov. 8

Registration is open now for an advanced charm school course starting next month at GD/Convair.

Sponsored by CRA, the course is open to all Convair women, wives, and teen-age daughters who have completed beginning courses, Martha Woodberry, commissioner of women's activities, said.

Salvage Yard Sale Schedule Listed

Next four-week Saturday sales schedule at General Dynamics salvage yards at two San Diego divisions are:

GD/Convair—Oct. 28, Nov. 11.

GD/Astro—Nov. 4 and 18.

Opening session will be Nov. 8 with two-hour classes held each Wednesday thereafter for six weeks, 7 to 9 p.m., in the Convair cafeteria executive dining room.

Edith Antelline, charm school director, will give individual attention to each student's special problems. Time will be devoted to individual figure correction, posture, walking, modeling technique, make-up, hair styling, voice improvement, business and social etiquette, and apparel.

Discount cost of the entire course, which is underwritten by CRA, is \$17 a person, a fraction of the cost if taken individually. Fee is payable upon registration.

Registration may be made at Plant 1 employee services or at Rose Canyon, at office of Virginia Cannon, R. C. ext. 2125.

CRA Ski Club Plans First Season Parley

Trips to Mammoth and a dry-land ski school for adult beginners will be discussed at CRA Ski Club's first meeting of the season Nov. 7.

Commissioner Joe Harris said the meeting will get under way at 8 p.m., executive dining room in Convair cafeteria.

Dry-land instruction should precede actual snow skiing, Harris said. GD/Convair's club annually obtains special chairlift and lesson rates.

Harris urged all persons interested in skiing, novice or expert, to attend.



JOINT EFFORT—General Dynamics' research engineers E. A. Bates (far right) and Edwin Campbell (fourth from right) have supervised and coordinated a GD/Convair based team of aerospace industry representatives in development of APT (Automatically Programmed Tool). Secretaries Joyce Palma and Nancy Kuhn (second and third from right) have been on loan from GD/Convair.

Computer 'Language Barriers' Attacked by Aerospace Team

Fourteen aerospace representatives now based at General Dynamics/Convair are developing a "universal language" for application of computers to manufacturing problems.

Called APT (Automatically Programmed Tool), the program is a joint effort by Aerospace Industries Association (AIA) member companies—General Dynamics included—to standardize computer programs and thus facilitate interchange of manufacturing data in the form of computer "brain tape."

"We have something of a 'language barrier,'" E. A. Bates, GD/Convair senior research engineer and national APT coordinator, explained. "Different companies have their own 'dialects' when it comes to preparing computer tape for direct production machines."

Bates said that "even within General Dynamics there were 'language differences' so that interchange involved expensive and time-consuming 'translations.'"

Establishment of APT allows General Dynamics to interchange work effectively, simply and quickly.

Bates, who received his B.S. from New York State College of Ceramics, Alfred University, and

his M.S. in chemistry at University of Pittsburgh, joined GD/Convair in 1956. He has been APT's representative from the digital computer lab since 1958.

While APT is still in experimental stage, numerically-controlled machines have had a long and successful history with General Dynamics. GD/Convair was first in the United States to turn out a production part using "brain tapes."

APT, along with numerical control, has been used to varying degrees in F-106, 880 and 990 programs and will be introduced on an expanded scale into manufacturing capability at GD/Fort Worth within six months.

Other General Dynamics men who have played key roles in development of APT include:

R. K. May, chief of applied manufacturing research at GD/Fort Worth, chairman of AIA's aerospace manufacturing committee.

Edwin Campbell, research engineer, GD/Convair, former GD/Astronautics representative to APT.

The task of continued expansion and further standardization of technique will be turned over to Armour Research, Illinois Institute of Technology, in December.

'APT' Used in Automatic Outlining, Pioneer Effort at San Diego

An airfoil contour was outlined automatically for the first time this month at General Dynamics/Convair using a programming method developed through close cooperation of three company functions.

From original data supplied by engineering loft, digital computer programmers evolved a system of mathematically defining a curved line through points, using the industry-wide APT (Automatically Programmed Tool) system. Applied manufacturing research department coordinated interdepartmental activities.

Until this time, no computing program had been developed which could be used for linking basic element line intersections (or grid points) to form any but conical shapes.

According to E. L. Moore of engineering loft, who was closely connected with the program from its inception several months ago, the new method will allow either automatic scribing or milling of an airfoil section to a high degree of accuracy on any tape-controlled contouring machine. This is but one part of an overall numerical-control research and development program sponsored by the company over the last year.

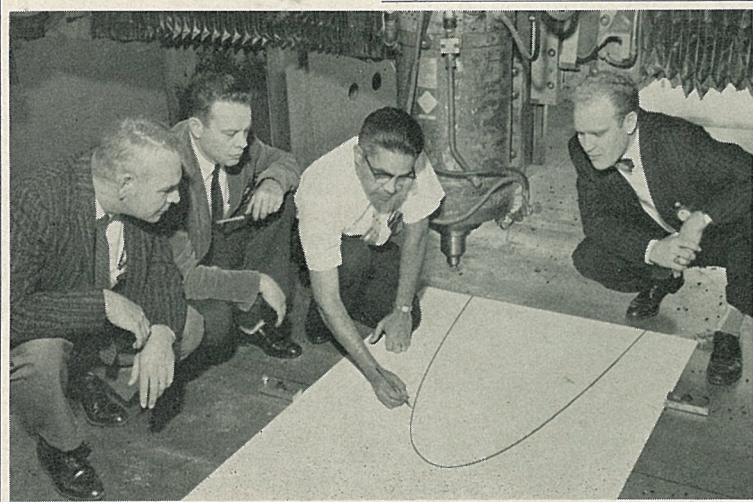
The trial run saw a leading edge rib for the basic Convair 880 scribed automatically on a white-painted aluminum layout board by a tape-controlled Giddings and Lewis skin mill at Plant 2.

"The test proved that now it is possible to attain accurate external airfoil layouts quickly by

the computer 'mill-scribe' program," Moore continued. "This will eliminate a great many manual calculations and manual drawings and could, eventually, cut lead time between design and production by as much as half."

W. J. Wood, as engineering loft group engineer, was directly responsible for that section's part in the cooperative effort.

Developing the analytical routines for loft work were R. I. Hagar, APT system representative for GD/Convair, and D. R. Eaton, programmer, both reporting to Dr. Leo Lapidus of the digital computing lab. S. C. Padilla of applied manufacturing research, which is directed by W. E. Wise as chief, coordinated the project.



TRIAL RUN—S. C. Padilla points to machine-scribed loft line for 880 part using computing system preparation program just developed at GD/Convair. Intently viewing results of months of study are, from left, E. L. Moore, R. I. Hagar, Padilla, D. R. Eaton.

Two More B-58s Join 305th Wing

A total of 14 B-58s now belong to the 305th Bomb Wing at Bunker Hill AFB following recent delivery of two Hustlers to the Indiana base.

Hustler No. 81 was delivered in a flight which lasted four hours. Crew consisted of Maj. H. E. Flook, pilot; Capt. L. Broome, navigator; and 1st Lt. C. R. Leonard, DSO.

In a 3-hour, 35-minute delivery flight a few days later, No. 77 was delivered to the Indiana base. Lt. Col. J. J. Trevisana was pilot; Capt. B. A. Silva Jr., navigator; and 1st Lt. J. S. Coryat, DSO.

Build-up of the second wing of B-58s at Bunker Hill continues, with delivery of three more production Hustlers—Nos. 78, 80 and 85—tentatively slated for late October.

According to a SAC release made earlier this year, the 305th will be fully equipped with a full complement of 40 B-58s by May, 1962.

B-58 ENGINE CHANGE BREAKS OLD RECORD

A Carswell AFB maintenance crew changed a B-58 engine in the record time of 3 hours, 30 minutes this month, besting the previous record by 1½ hours.

An engine change involves taking off the engine, performing necessary maintenance, installing the engine, and finally conducting engine runs and final inspection.

No. 3 engine on TB-58 No. 12 was changed Oct. 4 and the aircraft was flown that afternoon, without a single "squawk" on the engine.

Crew making the change was S/Sgt. Edwin A. Bruner, S/Sgt. Edward Euglow, A/1C David L. Lake, and A/1C Elbert H. Woodall.

Supervisors in the project included C/MSgt. John B. Shinn Jr., S/MSgt. Ronald E. Schoonover, and S/MSgt. Wesley E. Davis.

CAB, FAA Men Trained in 990

Two Civil Aeronautical Board officials, both from Washington, D.C., and three Federal Aviation Agency representatives ended a two-week training course on the Convair 990 at General Dynamics/Convair last Friday.

Special familiarization lectures were arranged by customer transport service instructors to meet specific needs of the two groups.

CAB men, J. H. Lewis and H. H. Black, as aircraft accident investigators, were concerned primarily with 990 escape systems and emergency equipment.

The three FAA men spent their time in a program on 990 engines and systems receiving power from the engine. They were: Lyle O. Combs, aircraft modification design engineer from Oklahoma City; E. B. Saul, air carrier maintenance, Los Angeles; and J. R. Ball, electronics engineer, also Oklahoma City.



DOLLAR SAVER—J. V. Dickson, left, GD/Astro, who submitted \$1-million-plus Cost Improvement Proposal recently, shows M. F. McDonald, GD/Astro manager of organization and systems, Chamber of Commerce trophy awarded him.

All Records Smashed By Million Dollar CIP

A million-dollar Cost Improvement Proposal (CIP)—the largest since the CIP program's inception—has been approved for installation at General Dynamics/Astronautics.

James V. Dickson, depot and support contracts administrator (Dept. 110-0), submitted the idea which calls for consolidation of several operational spare parts contracts to support all related production contracts.

The single spares support contract innovation, expected to save \$1,078,000 in its first year of use at GD/Astro, may also be applied as standard Air Force practice to future major weapon system programs.

Dickson's idea eliminates hundreds of pounds of paperwork previously required to document spares for several programs individually.

Several thousand documents, each requiring separate procurement and delivery action, will no longer be needed, and the total number of high value items required is reduced. Individual provisioning parts breakdowns (PPBs) formerly necessary to back spares items on each contract, are eliminated, with this item alone saving over \$75,000 yearly in preparation and reproduction costs.

The CIP plan for salaried employees and the Employee Suggestion (ES) program for hourly employees are administered at GD/Astro by organization and

systems (Dept. 170).

Hourly employees receive cash awards for accepted suggestions. In the case of CIPs, a record of acceptance is placed in the personnel file of the individual submitting them, and is considered in connection with periodic performance reviews.

In addition, CIPs such as Dickson's, which result in extraordinary savings, earn their originators nominations for the annual President's Award.

C. R. Smith to Speak To Science Academy

Clarence R. Smith, design specialist in General Dynamics/Convair fatigue laboratory, will be guest speaker before the National Academy of Sciences, Washington, D.C. on Nov. 7.

His paper is titled, "The Cause and prevention of Fatigue Failures in Metallic Structures."

Smith is nationally known for his work on fatigue of metal structures.

Some of his innovations, such as edge-driven rivets and auxiliary thin doublers, are known to increase structural longevity by five to 100 times.



C. R. Smith



"OUTSTANDING"—In recognition of "outstanding record" in U. S. Savings Bonds buying by personnel of General Dynamics divisions, "Minute Man Award" was made this month at San Diego. Holding flag are R. H. Biron, right, senior vice president—industrial relations, and J. L. Budros, director of personnel administration.

General Dynamics Bond Buyers Earn Minute Man Flag Award

A "Minute Man Award" was presented at San Diego this month in recognition of "an outstanding record of participation in the payroll savings plan" for purchase of U.S. Savings Bonds.

Specifically, the award from Treasury Secretary C. Douglas Dillon, involved the records of General Dynamics/Pomona, General Dynamics/Convair, General

Dynamics/Astronautics and General Dynamics/Fort Worth. It included permission to fly the "Minute Man" flag.

More than half of the employees in these divisions currently purchase bonds by regular payroll deduction. According to the latest figures available, \$386,359 is deducted every week for this purpose, or more than \$20 million each year!

Are We Giving



Our Fair Share?

GENERAL DYNAMICS

SAN DIEGO EDITION

NEWS

Vol. 14, No. 23

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Wednesday, November 8, 1961



BACK HOME—Delta Queen, first Convair 880 delivered to customer airline, lands at Lindbergh Field Oct. 29 on inaugural flight of new Delta Air Lines 880 passenger service into San Diego. General Dynamics officials welcomed first passengers.

Delta Air Lines Begins 880 Daily Service From San Diego to Florida

San Diego air passengers now can fly directly from their home town on San Diego-built jetliners.

Delta Air Lines inaugurated Convair 880 service from San Diego for the first time for any air operator on Oct. 29.

First 880 to go to a customer airline, the Delta Queen, streaked into Lindbergh Field to bring scheduled passenger service to the city in which it was built.

The jetliner carried Delta Air Lines dignitaries and guests on its run from Fort Worth when it arrived in San Diego on the Sunday morning inaugural flight.

C. Rhoades MacBride, executive vice president of General Dynamics Corporation, and J. H. Famme, vice president and general manager of General Dynamics/Convair, greeted Charles Dolson, vice president-operations for Delta, who had boarded the plane at Fort Worth.

The inaugural flight left San Diego at 10:10 a.m. for Los Angeles, Dallas, and Orlando.

Schedule for the new Delta Convair 880 service into San Diego is:

eastbound, departure daily at 10:10 a.m., stops in Los Angeles, Dallas, arrival at Orlando, 7:52 p.m. EST.

Westbound, the flight leaves New Orleans at 7:15 a.m. CST, Fort Worth at 8:50 a.m. CST; and arrives at San Diego at 9:40 a.m. PST.

The new 880 connections will prove convenient for West Coast passengers traveling to and from Florida missile bases, say Delta officials.

First 880 to begin service from San Diego was delivered to Delta Air Lines on Feb. 9, 1960.

Provisional Ticket Issued for 990

A provisional airworthiness certificate for the Convair 990 jet transport was issued by Federal Aviation Agency early this week.

It permits customer airlines to begin crew training and route familiarization in advance of full FAA 990 certification scheduled in December.

Damaged Parts Get Stickers In New Drive

"Scratch bug" stickers are appearing in every production area throughout General Dynamics/Convair plants as material handling drives forward in its determination to exterminate scratch and damage causes.

Newly-appointed material handling inspectors stick a pink form, bearing one of a dozen "scratch bug" slogans to every damaged part. When violations are corrected, pictures are removed.

"Everyone must combat scratch and scrap 'bugs,'" stressed R. M. Hatcher, manager of operations planning.

"Anything that damages parts adds cost to production and time to our schedule," continued Hatcher. "Anyone who

(Continued on Page 2)

Con-Trib Drive Aims at 100% In Membership

GD/Convair's twin-goal Employees' Con-Trib-Club campaign went into high gear this week as supervisors and union committeemen began circulating tab cards for new members, as well as cards for old members to increase their contributions.

The drive will last until Nov. 17.

"Our goal is 100 per cent participation and 'fair share' giving," J. K. Field, drive chairman, announced.

"United Fund, which opened its door-to-door \$4-million-drive simultaneously, is fighting to keep its agencies alive. We, through Con-Trib, must give them 100 per cent support."

Union representatives from IAM, IATSE, EAA and IBEW will assist Con-Trib's committee in the double-barreled campaign.

Attached to tab cards will be a "Guide to Giving" based on "fair share" percentages and a complete breakdown of an individual's donation, showing the exact division among agencies.

Field said present Con-Trib members wishing to increase their weekly deductions to a "fair share" should do so at this time.

All members and new members will receive a membership card, window sticker and membership pin.

"This will constitute proof to all community agencies that you have made a package-contribution," Field explained.

"GD/Convair will not permit nor recognize any other campaign to raise funds, short of an emergency. By giving in accordance with the 'fair share' level you are

fulfilling your obligation once and for all to every welfare and charitable organization in San Diego county."

Con-Trib-Club contributed \$270,000 to United Fund and other charity organizations last year.

GD/Convair's Emergency Aid Fund, maintained permanently out of Con-Trib collections, paid out \$27,000 to GD/Convair families in distress through no fault of their own.

Homeless, Sick Benefit From Con-Trib Funds

Membership in GD/Astronautics Employees' Con-Trib-Club is a far-reaching affair.

Each contribution benefits at least 216,000 families over a year's time!

That is an estimate of the number helped in one way or another in the San Diego area by United Fund charities alone. And, besides the 97 agencies included in the United Fund, Con-Trib donates to 30 others during the year!

To be sure, some of these hundreds of thousands benefit to a minor degree—a needy child's teeth are checked—but others are helped in major manner. For example, a crippled child receives an operation so he can walk; a broken home is re-established; a seeing eye dog bought for a blind veteran.

Con-Trib funds which went last year to United Fund groups helped support boy and girl societies in all parts of the county. Boys' Clubs in San Diego, Carlsbad, Chula Vista, Oceanside provide recreation for thousands of boys from 7 to 19. Boy Scouts, Camp Fire Girls, Girl Scouts are all aided in their program of wholesome recreational activities for young people. YMCAs and YWCAs offer a wide range of recreation, health, and social activities for entire families and servicemen.

Family Service Association counseling helps bring together broken families, helps work out problems in the home. Guadalupe Clinic gives care to children and babies, with more than 200 doctors and dentists donating their time.

The Salvation Army gives help to anyone in need; San Diego Children's Home provides homes for school-age children who cannot stay in their own homes; San Diego Society for Crippled Children operates a pediatric hospital with complete care for children.

(Continued on Page 2)

Value Control Newly Stressed As Coordinators Appointed

H. P. Williams will head a stepped-up value control program at General Dynamics/Convair as manager of value control, J. H. Famme, vice president and general manager, announced.

With renewed emphasis on value control within GD/Convair, coordinators have been assigned to each of Famme's staff members. These nine men will be responsible for value control activities within departments and report to Williams.

Newly-appointed coordinators are: W. H. Schaefer, engineering; J. J. Ireland, contracts and planning; G. J. Bartolomei, operations; D. L. Macey, material; A.

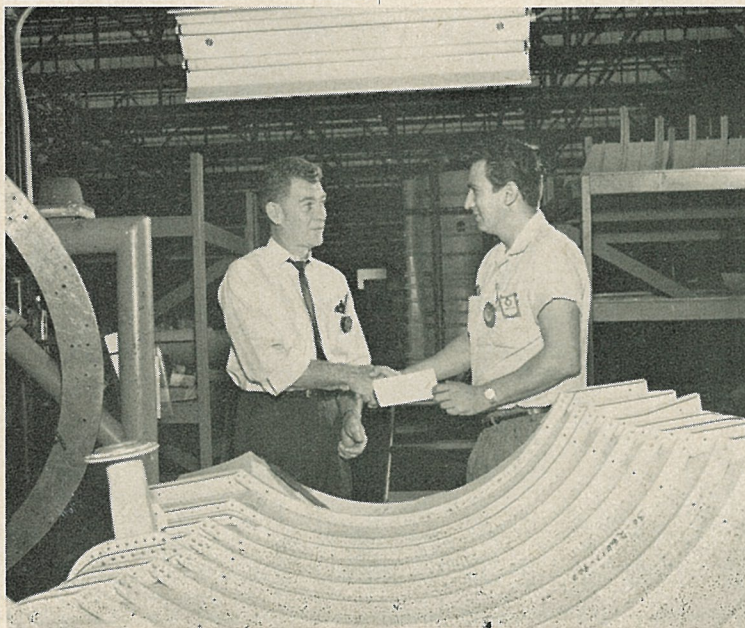
G. Mitchell, marketing; L. Hawson, communication; M. S. Lachman, industrial relations; G. E. Briggs, quality control and production flight; J. J. Jodka, controller.

Emphasizing the importance of applying value control principles in every company function, Williams defined it as "an organized method to eliminate non-working cost in a product, system, procedure, or practice."

"Application of value control uses the dollar sign for decision-making processes," he stressed.

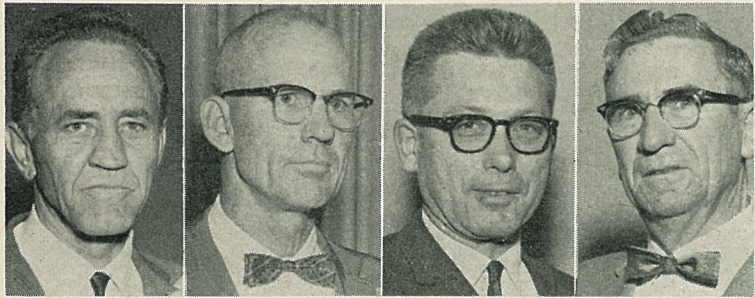
As the division program moves

(Continued on Page 2)



ANTE UP—After "seeing for himself" (page 3) where Con-Trib-Club money goes, Nep Peralta, Dept. 140, IAM committeeman, raises his pledge. E. H. Ulsund, assistant foreman, collects his tab card.

Log Book Entries



SALUTED—Latest to receive 25-year service emblems at General Dynamics/Convair, upper row from left, A. V. Elo, Dept. 31; J. J. Swarts, Dept. 48-09; H. K. Cheney, Dept. 6-40; S. A. Dodd, Dept. 31.

Service Emblems

CONVAIR

Service emblems due during the period Nov. 1 through Nov. 15.

Twenty-five-year: Dept. 140, B. U. Santi; Dept. 148, W. J. Enlund.

Twenty-year: Dept. 14-7, E. P. Shoemaker; Dept. 15-5, O. C. Bradshaw; Dept. 16-9, R. L. Horne; Dept. 31, L. L. Bishop; Dept. 68-0, C. R. Smith; Dept. 137, D. L. Cook; Dept. 140, E. L. Phillips; Dept. 145, Asencion Loya; Dept. 160, E. E. Rinks; Dept. 171, F. A. Lucio, E. S. Needham; Dept. 192, J. H. Lewis, L. R. Nieder; Dept. 400, Eugene Catton Jr., R. B. Gattshall, A. G. Lilley, Louis Newman; Dept. 401, C. W. Lockerm.

Fifteen-year: Dept. 6-07, M. G. Torbett; Dept. 25, P. E. Gaither, M. T. Ratcliffe Sr.; Dept. 31, M. B. Bodger; Dept. 48-46, A. A. Ames; Dept. 101, M. S. Cole; Dept. 115, G. L. Clayton; Dept. 135, L. N. Hayes; Dept. 215, Lester Carney Jr.; Dept. 400-2, R. J. Harris; Dept. 401-5, W. A. Hawkins.

Ten-year: Dept. 6, H. B. Freeman, R. E. Morris, Verna M. Smith, C. E. Thomas, Bill Worsham; Dept. 15-4, J. J. Laudenslager; Dept. 16-3, R. S. Harper; Dept. 21-2, D. F. Swindall; Dept. 25-1, R. P. Elsner; Dept. 31, D. A. Bettinger, J. Q. Cepeda, Nick Corby.

Dept. 34-1, R. L. Vogel; Dept. 48, Joseph Fodor Jr., H. C. Peters, E. A. Williams, C. R. Woods; Dept. 50, J. C. Batteiger, K. S. Coward; Dept. 91, Roberta P. Slayton, Dorothy V. Todd; Dept. 101, J. B. Carroll, A. R. Carvajal, A. F. Mobley, H. C. Patterson, Joe Plaza; Dept. 116, Stella C. Hahling.

Dept. 120, Olive H. Sheffield; Dept. 123, Ona E. Gonnell; Dept. 129, Lydia P. Peik; Dept. 133, Geneva B. Delgado; Dept. 138, James Dennis; Dept. 140, L. E. Powless; Dept. 142, W. C. Mossman; Dept. 144, Edward Lee; Dept. 145, G. I. Johnson; Dept. 146, E. W. Manuel.

Dept. 148, M. M. Yamaguchi; Dept. 170, E. R. Perry; Dept. 180, J. L. Ellison; Dept. 192, Frank Bremner, Frieda B. Servis; Dept. 215, Mabel H. France, Frank Lopez Sr.; Dept. 216, Minnie Hayes; Dept. 218, C. W. Neese Jr.; Dept. 400-4, A. L. Vachon (due 10-15-61); Dept. 401-7, T. F. Bingham.

GD/ELECTRONICS

Fifteen-year: Dept. 6, A. H. Roberts. Ten-year: Dept. 6, Maryanna G. Duket, D. G. Gordon, H. L. Martin, W. G. Palmer, T. R. Queen; Dept. 8, R. L. Helton.

Value Control Re-emphasized

(Continued from Page 1)

into intra-departmental organization, corporation, division, departmental standard practice will be initiated or revised as necessary, said Fammie.

A training program will be implemented throughout the plant and immediate value control action will be taken on projects requiring attention.

First planned value control seminar will begin Monday (Nov. 27). Forty GD/Convair men, including the value control coordinators, will attend the two-week course.

In other activities, a value control seminar for executives and their staffs in GD corporate office and GD/Convair was held this week (Nov. 6 and 7) to acquaint them with value control aims. Ed Heller, value control coordinator at GD/Pomona, conducted the seminar sessions organized under auspices of E. W. Feddersen, GD director of manufacturing engineering.

Replacing Williams in his former post as chief new projects engineering is C. S. Brandt.

General Dynamics NEWS

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MGT. CLUB TO HEAR REFUGEE AND DEAN ON WORLD CRISIS

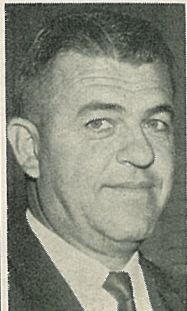
An East German refugee and the dean of Long Beach City College's naturalization program will speak at the monthly GD/Convair Management Club meeting Nov. 15.

John "Scotty" Doig, chief of service parts, will act as master of ceremonies.

The 6 p.m. dinner meeting will be in the Caribbean Room of El Cortez Hotel. Tickets are available for \$2.25 from the usual outlets.

Pandora Donovan, assistant supervisor of adult education for Americanization, San Diego City Schools, will introduce the East German escapee, Wilma Schroeder.

Siegfried Ringwald, Long Beach City College dean, will speak on "The Most Dangerous Week in Our Country's History." Ringwald recently returned from East Berlin where he had been engaged by the State Department.



Also receiving his 25-year emblem recently was F. F. Stevens of Dept. 171.

Personals

CONVAIR

We wish to express our sincerest appreciation to all of the Convair friends of Hilda M. Dorman (Dept. 48), especially those in Rose Canyon shipping department, for the many kindnesses, flowers and cards received at her death.

Frederick B. Dorman and daughters, Diane and Patricia (Dept. 48-95).

We wish to express our gratitude to all of the Convair friends, especially those in Dept. 91, controller's staff, and Convair Management Club, for the many kindnesses, expressions of sympathy, cards, and flowers at the death of our husband and father, Clinton R. Hamann.

Mrs. Clara P. Hamann and son, Clinton R. Jr., and James (Dept. 48-95).

Deaths

CONVAIR

DORMAN—Hilda M., Dept. 48, died Oct. 21. Survived by husband, Frederick; daughters, Diane and Patricia; father, two sisters; and a brother.

McGOWAN—Elsie, Dept. 3-3, died Nov. 1. Survived by husband, Wallace; daughter, Doris Henne; son, Edward; and three grandchildren.

Promotions

CONVAIR

Promotions to or within supervision effective Oct. 23.

Dept. 16-6, Communication: To office services asst. supervisor, G. C. Robinson.

Dept. 48-60, Quality Control: To inspection asst. supervisor, J. M. Wallace.

Dept. 141, Jet Transport Delivery Preparation: To superintendent, N. R. Keough.

Dept. 192, Manufacturing Control: To chief of M/C, M. S. Stepih.

Dept. 400, Tooling: To chief tool engineer, E. H. Damarus. To asst. tool project engineer, F. N. Shepard.

Dept. 401-5, Tool Manufacturing: To general foreman, C. L. Thompson.

GD/ELECTRONICS

Dept. 1, General Manager's Office: To manager reliability & quality control, E. S. Winlund.

Dept. 6, Manufacturing: To asst. foreman, R. L. Picard.

Dept. 7, Material: To M/C asst. foreman, T. B. Woodruff.

Retirements

CONVAIR

HAMAN—Russell L., Dept. 31. Seniority date Jan. 3, 1956, retirement effective Oct. 21, 1961.

LUTZ—Carl A., Dept. 129. Seniority date May 11, 1942, retirement effective Oct. 13, 1961.

MELLON—Raymond F., Dept. 45-0. Seniority date Nov. 13, 1946, retirement effective Oct. 27, 1961.

MOORE—Don P., Dept. 192-3. Seniority date March 4, 1952, retirement effective Oct. 27, 1961.

PAGE—Arthur M., Dept. 120. Seniority date Aug. 28, 1953, retirement effective Oct. 27, 1961.

PANFIL—John J., Dept. 206. Seniority date Jan. 22, 1946, retirement effective Oct. 20, 1961.

HOLLOMAN AFB

MILLINS—James H., Dept. 313-4. Seniority date Nov. 24, 1954, retirement effective Oct. 31, 1961.



WINNER — Matthew Unwin, GD/Convair apprentice, winner of San Diego annual contest, is snapped at milling machine in Bldg. 1.

GD Apprentice Wins SD Contest

Matthew Unwin (Dept. 401) was judged most expert in the annual machinist and tool and die makers contest open to fourth-year apprentices in the San Diego area.

As a result of his standing in the local contest Oct. 21 at San Diego City College, Unwin competed in the state contest at Van Nuys last week.

In the San Diego competition sponsored by San Diego General Apprenticeship Committee, four apprentices took part. Unwin and Eugene Pacheco (Dept. 400) represented General Dynamics/Convair; David Zajac and Joe Vaughan, Fowler Engineering Co. of El Cajon.

All were given the same project to work through from a blueprint and piece of metal.

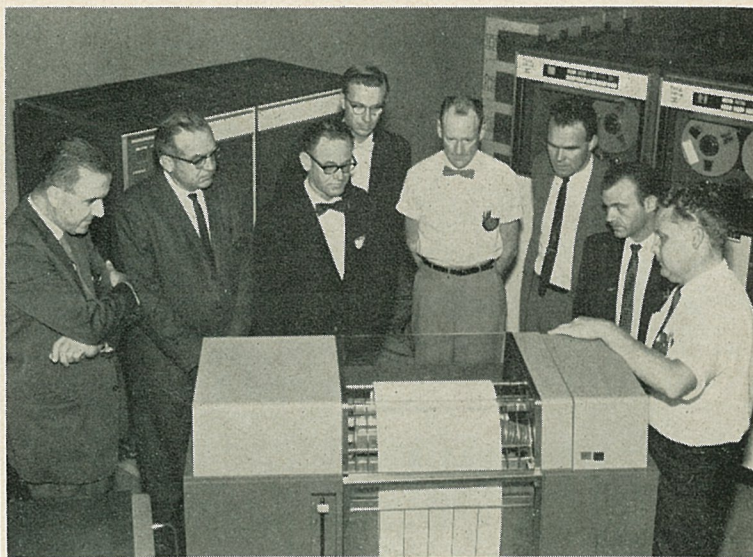
Judging the finished products were W. S. Blackington and D. J. Reed, machine shop instructors at SD City College, floor judges were Harold Washington, retired from GD/Convair Dept. 401, and Marion Andrews, who represented the San Diego County Machinist Joint Apprenticeship Committee.

Homeless and Sick Get Con-Trib Funds

(Continued from Page 1)

Travelers Aid Society provides information, counseling, emergency assistance to service families, travelers, newcomers. Visiting Nurses of San Diego, La Jolla, Escondido send trained nurses into homes for mothers with new babies, aged people, bedfast invalids.

San Diego Braille Club is devoted to making lives of the blind more comfortable and interesting; San Diego Hearing Society helps people with impaired hearing to learn lip reading, provides a deafness prevention program.



FIRST RUN—Watching GD/Convair's parts catalog sheets run off IBM 1403 printer in data processing department are (from left) J. J. Alkazin, director of contracts, planning, service parts; O. W. Harper, manager of customer service; H. R. Kennedy, chief of service publications; Walt Johnson of data processing; Harry Krumm, service publications; Ralph Hamilton, systems and procedures; R. J. Krause, computer room monitor; and Lou Hudson, Dept. 97 operator.

Jetliner Parts Data Compiling Task Assumed by Computers

Installation of a new computer application for preparation of spare parts documentation and illustrated parts catalogs for Convair 880/990 jetliners has been completed at General Dynamics/Convair.

According to H. R. Kennedy, chief of service publications, installation of this system is probably the first application of its kind within the aerospace industry.

The computer program now processes daily the parts information released from service publications onto magnetic tape for rapid printout and release of customers' documents.

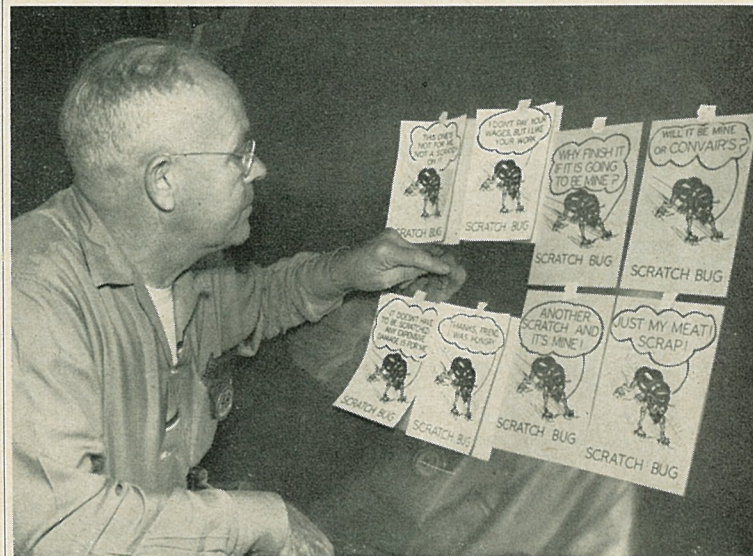
"The system will reduce cost of preparation of 880/990 spares documentation and illustrated parts catalog data by \$100,000 over the next year," Kennedy said.

"It also speeds delivery of parts information to customers. For example, span time between release of engineering data and delivery of Spare Parts Lists to airline customers will be cut from 30 to 15 days."

Information now compiled by computer involves service instructions for operation and maintenance of Convair jet transports provided by GD/Convair to 880/990 operators. An important part of this service is preparation and maintenance of spare parts documentation for selection of spare parts and the illustrated parts catalog for parts identification, said Kennedy.

"Magnitude of the task involved in preparation and maintenance of the parts identification documentation of the 880/990 program can, perhaps in part, be shown by the fact that the illustrated parts catalog for the 880 alone consists of 4,400 pages covering approximately 250,000 elements of information."

Credit for planning and installing the new system goes to Harry Krumm, Cliff Pennick, and Frank Reed of service publications; Walt Johnson, Jerry Anderson, John Balistreri, Dave Merritt, Don Mead, Charles Hussey of data processing; Joe Dodds and Ralph Hamilton of systems and procedures.



"INFESTED"—R. L. Gill, material review inspector (Dept. 48), points to small scratch marring aircraft skin, surrounded by "scratch bug" posters now labeling all damaged parts found in GD/Convair plants.

'Scratch-Bug' Stickers Appear; Decorate Damaged Parts

(Continued from Page 1)

moves, handles, stores, or works with materials in any way must be alert to damage risks."

Material handling experts pointed out places where "bugs" are most prevalent—in clothing, shop towels and wiping cloths, bench tops, tubs.

They said that thousands of dollars worth of damage are caused each year by sharp shirt buttons, belt buckles, metal chips clinging to sleeves or cloths; tools projecting from pockets; sharp edges of bench tops; carelessness during transporting of materials.

Notices going out to GD/Convair departments re-emphasize importance of scratch-free handling, "Damage to high value

items such as skins and skin material directly affects our ability to be competitive. Scrap and expensive repairs are not profitable and no concern can survive when such practices are considered normal.

"Solving our damage problem is a joint-effort task. No single worker or department can do it alone. Our work habits, training, and attitudes are showing. Let's show our best!"

CONSERVATION!

Not Conversation--

Con-Trib Members See For Themselves 'Where Your Money Goes'

On surprise visits last week, GD/Convair and GD/Astro Employees' Con-Trib-Club representatives inspected seven of United Fund's 97 agencies which Con-Trib helps support.

They toured Neighborhood House, Salvation Army, Family Service, Youth Activity Center for Mentally Retarded Children, downtown YMCA, Children's Hospital and Traveler's Aid.

"This is amazing," commented Nep Peralta, GD/Convair union committeeman (IAM), leaving Neighborhood House. "I had no idea the need here is so great . . . it must be met."

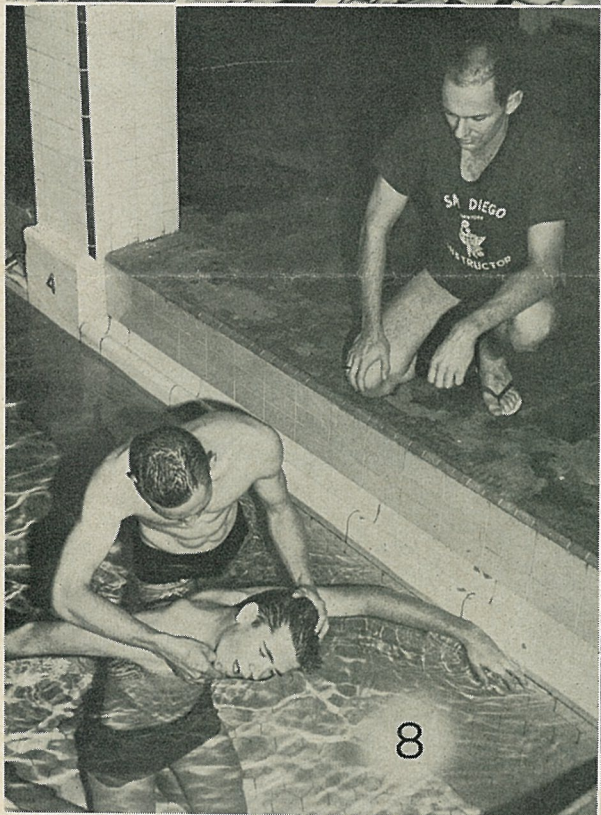
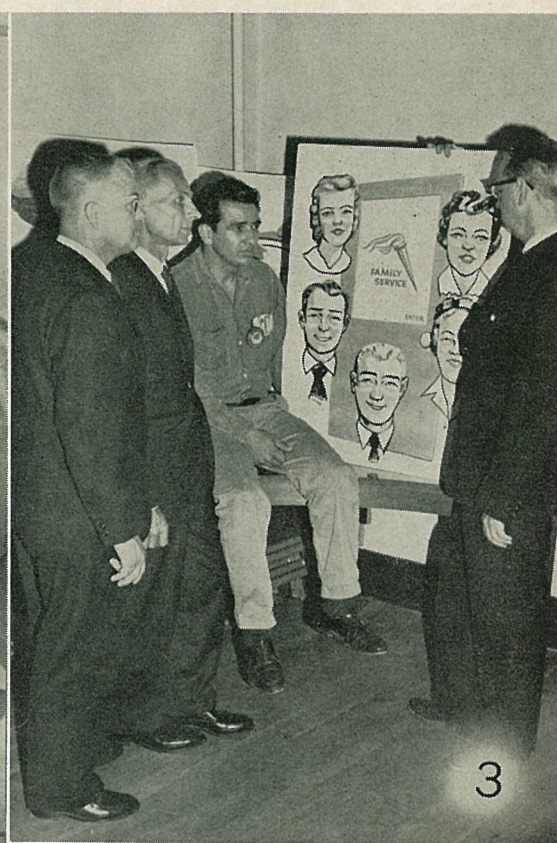
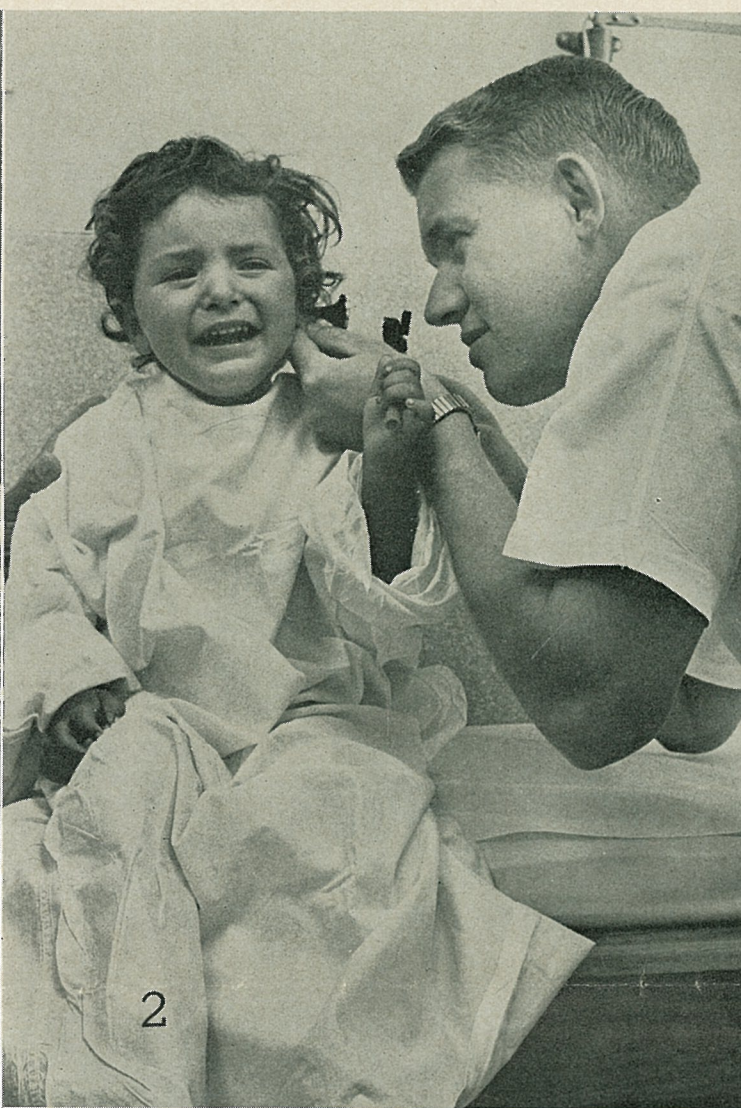
After posing with a small boy once seriously ill, now almost recovered, GD/Astro Con-Trib committeeman Ernest Buck asked, "Is there a more satisfying feeling than the knowledge that my small contribution may have helped . . . that the very emergency bed which this youngster is using was donated by Astro Con-Trib . . ."

June Ward (GD/Convair Dept. 8), discussing an acquaintance helped by Family Service, said, "These people are doing a unique job. They helped 192 Convair families last year. I personally know one wife whose marriage was saved . . . she is a new person . . . happy again . . . children se-

cure in a united home."

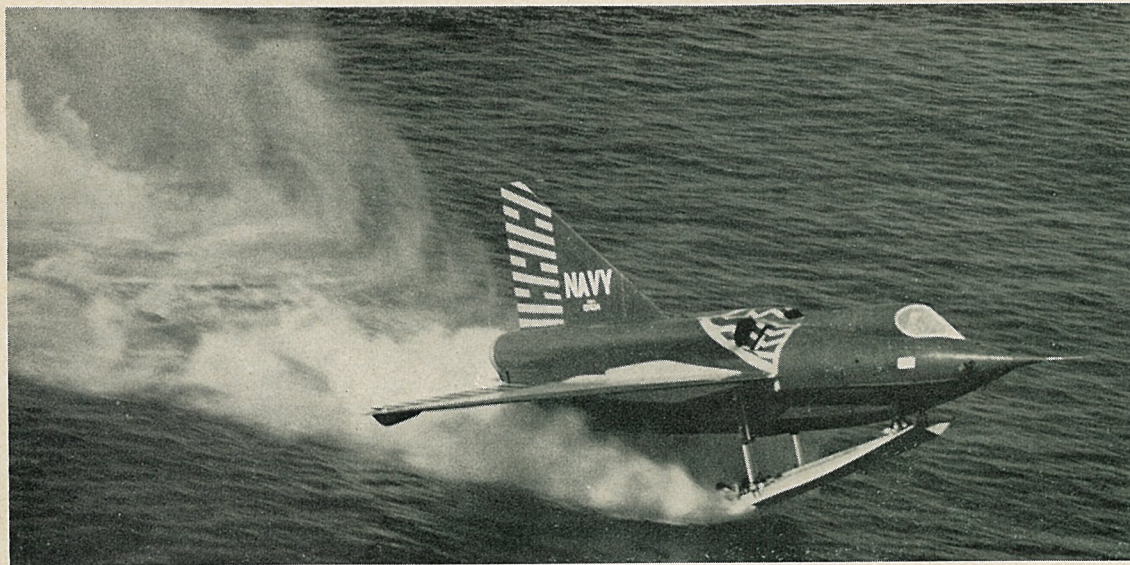
"Inspirational," Paul Pearson, GD/Convair supervisor, said while conferring with the youthful director of the Mentally Retarded Activity Center. "I'm convinced our donation was well spent."

Voicing what each must have felt leaving the day's last stop, Molly Dowell, GD/Convair Con-Trib's acting secretary, remarked: "I only wish that every Con-Trib member had made this trip. Surrounded by our own concerns, it is easy to forget the great good these agencies are achieving—and their urgent need for our unstinting support. It made us feel we must do more!"



MAKING THE ROUNDS—Con-Trib-Club representatives from GD/Convair and GD/Astro are shown on tour of United Fund agencies. (1) GD/Convair's Molly Dowell (right), acting Con-Trib-Club secretary, and June Ward (Dept. 8) admire textile work done by mothers at Neighborhood House. (2) Mercy Hospital intern, Dr. Andrew Janzen, inspects small-fry's ear at Guadalupe Clinic. (3) Nevin Wiley, executive director of Family Service Association, explains functions to Paul Pearson, GD/Convair supervisor, Ernest Buck, GD/Astro Con-Trib committeeman, and Nep Peralta, GD/Convair union committeeman (IAM). (4) Sr. Major Howard Sloan, Salvation Army commander, shows toys which will

be distributed to needy this Christmas. (5) Peralta and Pearson look on during "free hour" at Youth Activity Center, Association for Mentally Retarded Children. (6) Marcia Wheat of Children's Hospital, displays films donated by GD/Convair Con-Trib. (7) Buck smiles as playful youngster, sitting on emergency table donated to Children's Hospital by GD/Astro Con-Trib, laughs at cameraman. (8) Swimming instructors at downtown YMCA teach beginner. (9) Jerry Schultz (right), GD/Astro Con-Trib-Club secretary, and Larry Janson (left), GD/Astro Con-Trib-Club committeeman, watch while Clairemont Boys' Club staff member oversees construction of Halloween masks.



ANOTHER DELTA—Delta wing was applied to sea as well as land planes. This was "Sea Dart," built for Navy. It also had novel application of high-speed ski.

Plant 2 at SD 'Revived' In 1953 For F-102 Work

(Installment No. 71 of continuing history tracing background of General Dynamics products sees F-102s going into production for the Air Force and three other delta-winged firsts, Sea Dart, Pogo, and B-58 under development at Convair.)

A new Air Force procurement policy was tried for the first time in the F-102 program. This was the Cook-Craigie plan, named for Lt. Gen. Orval R. Cook and Laurence C. Craigie. Instead of starting full-scale production as soon as a new model is accepted, the contractor delivers a trickle of units for 18 months while exhaustive flight tests are conducted. Any major changes or improvements are incorporated into permanent factory tooling, so that combat-ready planes are delivered when mass production starts.

Convair moved an F-102 task force into empty Plant 2 in January, 1953, and began delivering occasional production aircraft in April, 1954, but did not throw the switch for full-scale output until late in 1955. The first delivery to an operational Air Defense Command unit took place May 1, 1956, when Lt. Col. Charles E.

Rigney, commander of the 327th Fighter-Interceptor Squadron, climbed into an F-102A at Convair's Palmdale flight test center and flew it home to George Air Force Base, Victorville, Calif.

By the spring of 1956 the Air Force had awarded Convair four production contracts for F-102As. Three of the orders included TF-102As, a two-place training version. On May 30 the initial contract was announced for building F-102Bs, an improved version.

Three other delta-winged planes, each the first of its kind, were developed by Convair. These were the XF2Y-1 Sea Dart, an experimental water-based jet fighter; the XFY-1 Pogo, first airplane in the world to take off and land vertically; and the B-58 Hustler, a supersonic medium bomber.

A product of Convair's hydrodynamic research laboratory at San Diego, the twin-jet Sea Dart flew first on April 9, 1953. Its wing, triangular fin, and sharp-nosed cockpit canopy gave it a family resemblance to the F-102. The XF2Y-1's most novel feature—and the one most difficult to perfect—was a retractable hydro-ski for takeoff and landing. A double ski was used first, but this created vibration and stability problems in the flight period between takeoff and retraction. Designers switched to a broad, single ski for continuation of the tests.

Through 1956, no performance figures had been released on the four planes built to that time. However, it was announced in 1954 that the second model passed Mach 1 on August 3, while executing a shallow dive at 34,000 feet. Thus, Sea Dart became the first water-based aircraft to achieve supersonic flight.

San Diego Chapter Of SAVE Forecast As Meeting Result

Formation of a San Diego chapter, Society of American Value Engineers (SAVE), may follow a meeting of the group's Southern California branch in Los Angeles tomorrow (Nov. 9).

The national organization was founded recently to enhance the stature of value engineering as a growing, functional discipline in modern industrial economics.

James N. Davis, Deputy Assistant Secretary of Defense, will address the Los Angeles meeting, scheduled for 6:30 p.m. at the Institute of Aerospace Sciences, 7660 Beverly Blvd. Subject of his address is "Value Engineering and National Defense."

E. J. Williams, General Dynamics senior vice president-manufacturing, and members of his staff, J. D. Blitch, director of programming; E. W. Feddersen, director of manufacturing engineering; J. Y. McClure, director of quality control, will attend. In addition, value control personnel from General Dynamics divisions of Convair, Astronautics, Electronics, Pomona, will be present.

Instruments Group Joins Astro Division

Instruments Section of General Dynamics/Electronics producing liquid level sensors in support of Atlas and Centaur programs was integrated last month with GD/Astronautics.

Plans call for some 20 former Convair Instruments employees to move from their present Frontier St. facility into Plant 71's Bldg. 33A by mid-December. They had, more recently, been assigned to Information Technology division of GD/Electronics.

Liquid level sensor production will be administered at GD/Astro by Frank Kemper, factory manager-electronics manufacturing, reporting to Elwood Bryant, GD/Astro vice president-operations.

Scientists Lecture At Academy Meeting

Three General Atomic scientists were among experts lecturing at the 96th fall meeting of the National Academy of Sciences last week on La Jolla and Los Angeles campuses of University of California.

Mark Nelkin, Wade L. Fite, and Joe N. Smith Jr. were among 25 San Diego scientists from University of California, Scripps Clinic and Research Foundation, and General Atomic Division of General Dynamics Corporation who were chosen to present papers.

Reliability Director Will Speak in L.A.

J. Y. McClure, General Dynamics director of reliability and quality control, will be featured speaker at the National Aircraft and Missiles Conference in Los Angeles.

McClure, former manager of quality control at GD/FW, will speak on "Quality Control from Management Viewpoint."

Gifted Knife

Nature Supplies Material, Ideas For Art Expression in Wood

When General Dynamics/Astronautics photographer Tom Mahnken took up wood sculpture, he added a third dimension to accomplishments in nearly every field of the graphic arts.

Mahnken is already well known in art circles as a painter. Oils and water colors with his signature have won a number of awards, and one hangs in the permanent collection of the Norton Gallery, West Palm Beach, Fla.

On many weekends, he disappears into Baja California where he is preparing a documentary photographic series on the inhabitants of remote areas, their lives and customs.

Since adding sculpture to his hobbies, Mahnken has finished a half-dozen works. He draws his subjects from nature.

Human figures in teak and ebony, a school of mackerel and a burrowing owl in rosewood, are complete. Getting the last fine finish is a massive pair of dolphins chasing a flying fish.

First step is selection of the raw material.

"I look for unusually fine pieces of wood," Mahnken ex-

plained. "Then, these may lie around for a year or more while I choose a subject I feel suitable in terms of form and texture."

With the basic concept firmly in mind, he goes to work, roughing out a crude shape with an axe or adze, then working with progressively lighter mallets and shallower gouges.

"The image and my approach to it often change as the work goes along," he added. "In one sense, it is not so much that I 'create' an image in the wood, but rather that the subject evolves."

Mahnken takes his work to the beach in summer, where he often attracts a cluster of curious.

"Beach lighting is fine, and I get a sun tan while I work," he said.

No amateur, Mahnken received his first art training while still in elementary school, and later studied at the Art Students' League, New York, under Reginald Marsh.

His partiality for fish and animals as subjects is also the result of formal training. He holds a bachelor of science degree from Cornell University—in zoology.



TAKING SHAPE—"Flying fish pursued by dolphins" takes shape in teak slab under skilled hands of GD/Astro photographer Tom Mahnken. His favorite studio is the beach.

Four Ideas Suggested at FW To Save GD More than \$9,000

Suggestions recently submitted by four General Dynamics/Fort Worth employees will mean a total of \$9,172 in installed savings.

Suggesters are a saw operator, two inspectors and an electrician.

Saw operator is W. E. Sellers, Dept. 59, whose ES will mean a first year's savings of \$3,385 after an installation cost of \$186. Sellers, with the company 15 years, scored on his first ES, pocketing \$338.50. He used the money for a special vacation trip.

Sellers suggested installing an adjustable supporting fixture in front of the Do-All saw used in sawing B-58 nacelle panels to size during fabrication. Installation reduced the operation from

a two-man to a one-man job.

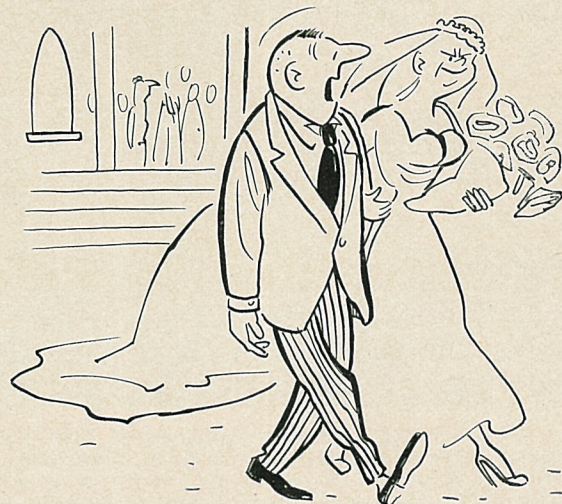
A joint suggestion by two Dept. 27-1 inspectors, T. L. Walker and F. X. Howe, will save \$3,162 the first year. Their idea involved "minor" cost. It reduces time formerly spent in magnetic inspection of parts already certified by vendors.

Electrician H. L. Brown, in Dept. 25-3, suggested that thermocouple wire on steam-heated platens be attached with a spring-loaded plate, rather than with paper tape, as previously. The tape system allowed damage to the wires and frequent replacement.

Brown's ES will mean \$2,625 installed first year's savings after \$75 installation cost.

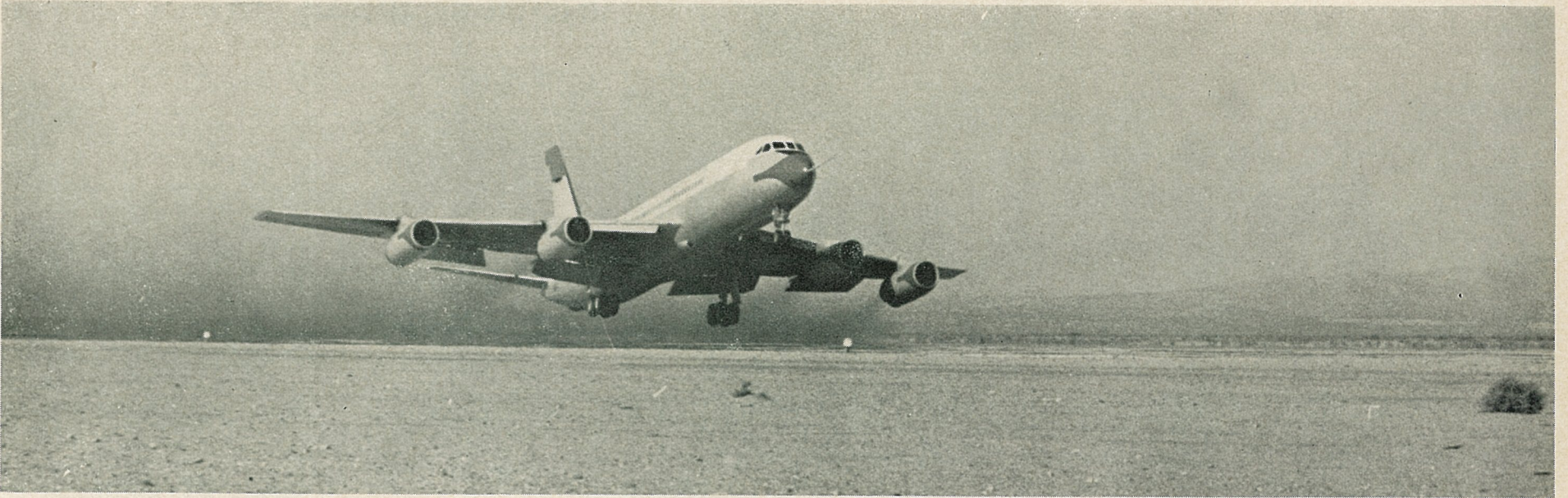


HUM, BOY!—Cameras didn't bother Danny Caillouet, son of GD/Astro's Joseph Caillouet, when he started to work on barbecued chicken. Danny was one of 1,000 taking part in Astro family picnic at Vandenberg AFB.

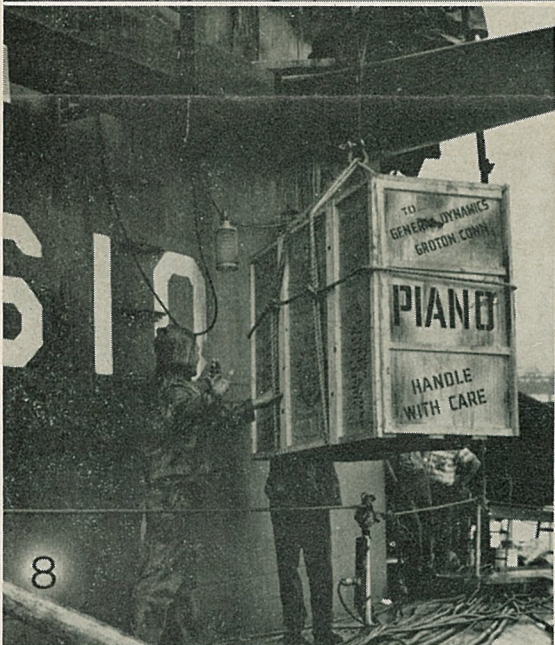
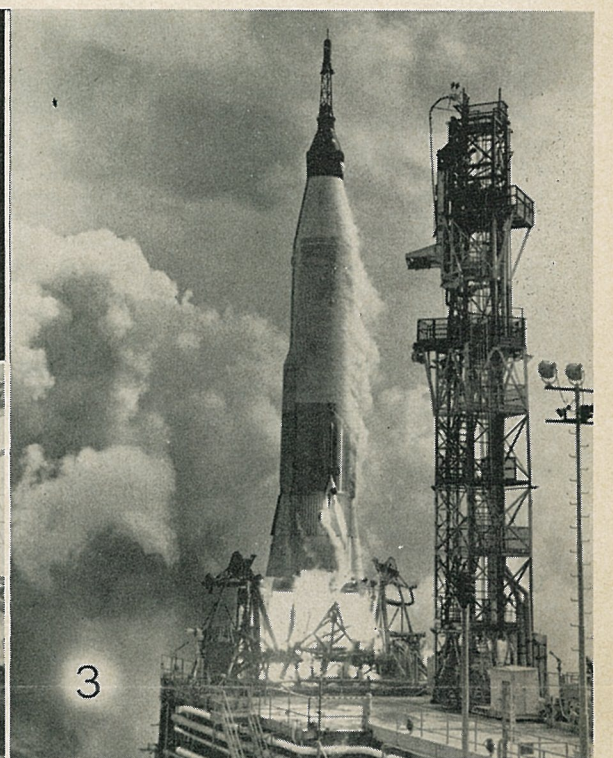
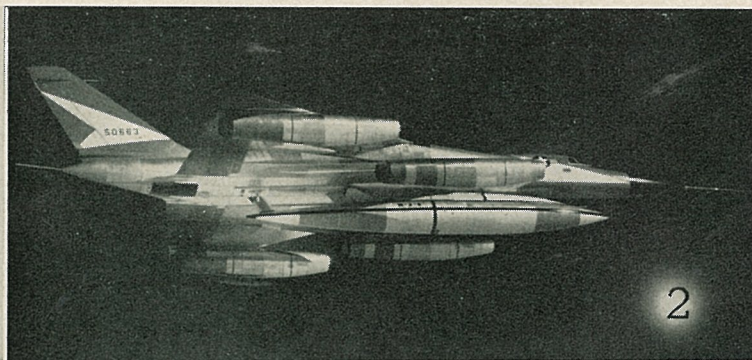


"I never thought it would lead to this the day I submitted that suggestion for closer employee relations."

Cameras Catch Highlights From Far-Flung General Dynamics Divisions



AROUND DYNAMICS — On both coasts — and in most states in between — General Dynamics products and people make news almost daily. Above, a Convair jet 990 undergoes heavy-load takeoff at Edwards AFB, Calif., preparatory to FAA certification. Below are other highlights from Dynamics divisions.



(1) General Dynamics/Pomona's new compact directional antenna, shown on Air National Guard control truck, is for ground-to-air communication with jet aircraft. It weighs only ten pounds. (2) A blur of speed is Mach 2 B-58 Hustler built by GD/Fort Worth. B-58s are on duty at Bunker Hill and Carswell AFBs. (3) GD/Astronautics' Atlas missile starts takeoff from Cape Canaveral. It was Atlas that placed Mercury spacecraft in orbit last September. (4) At GD/Electronics in Rochester, N.Y., these are not "bongo drums" but band pass filters for communication systems, built by Military Products Division, which Anthony Cucinelli is testing. (5) At San Diego, C. Rhoades MacBride, General Dynamics executive vice president, welcomes first arrivals as Delta Air Lines brings Convair 880 jet service

to San Diego. (6) Home from successful sales trip abroad is Canadair Limited's CL-41 jet. RCAF has adopted ship as basic trainer. (7) On lighter side, GD/Astro's Jean Foster, stationed at Altus AFB in Oklahoma where Atlas missile sites are under construction, makes charming Halloween "witch." (8) A submarine "first" was scored by Electric Boat Division when piano was loaded aboard Polaris submarine Thomas A. Edison, now being fitted out. (9) Production lines hum at Rochester where GD/Telecommunication is turning out XY universal switches for telephone exchanges. (10) Also on lighter side, raccoon that wandered into high altitude test lab at GD/Fort Worth wound up as pet for G. A. Bearce family! For no obvious reason, Bearce boys, Mike, 12, Mitch, 11, and Don, 7, named coon "John."

Coin Club Slates Officer Nominations

Coin clubbers will meet Nov. 16 in the executive dining room at 7:30 p.m. to nominate officers.

Evening's agenda will include fourth quarterly exhibit featuring gold and uncirculated coins.

In other activity, Vince Bacon won both door prize and "members only" drawing at the club's October gathering.

Archers Slate Novelty Shoot

A novelty turkey shoot, open to all archers regardless of skill or club affiliation, is planned by GD/Convair's Archery Club Nov. 12.

Competition will begin at 9:30 a.m. on Balboa Park Field range, Al Phipps, CRA commissioner, said.

Phipps said the match will be covered by Channel 10 and will be shown on Lute Mason's show, "Sports Unlimited," at 7 p.m., Nov. 22.

Using novelty scoring, 28 targets will have sealed envelopes giving individual scoring rules.

"This way everyone has a chance to win a turkey. Some scores may be determined by number of bull's-eyes hit and then some by number of times missed," Phipps said.

Entrants are asked to bring their own equipment.

Phipps said the shoot will be a warm-up for the IRC tournament slated for Dec. 10. GD/Convair's Archery Club will host.

Holiday Menu Slated For GD Cafeterias

A special holiday dinner will mark Thanksgiving at General Dynamics cafeterias at Convair and Astronautics divisions on Nov. 21.

Menu for the Tuesday date will be roast turkey and trimmings, said W. E. Rickman, Prophet Co. supervisor of these General Dynamics cafeterias. Price, including tax, will be \$1.

Meals at both Plant 1 and 2 cafeterias of GD/Convair and at the Astronautics main plant will include turkey, dressing, cranberry sauce, whipped potatoes, giblet gravy, buttered peas, roll and butter, beverage, pie.

Convair Golf Tournament Draws 168; Even 'Duffers' Walk Away Winners

"Mr. Average Duffer" had scores of chances to win Oct. 22 when a Convair Golf Club "Stag Day" event drew 168 participants to Circle R.

Awards in the best ball event went to Frank Gadiant and Ezra Hunt with a partner's total of 57. Deadlocked at 58 were Ed Ulund-John Pehota and Bill McColley-Bob Buchholz.

High team honors for the day fell to Joe Hickman and Helen Kielmeyer.

Blind Bogey finishers in order were Charles Hopkins, Mark Pruitt, V. E. Nagle and Jack Al-



HOLLOMAN BOWMEN—Hershel Strong, Mike Hinkle (both Dept. 313 at Holloman AFB), and Hinkle's son Steve, look over CRA prizes for their deer bags during recent New Mexico bow and arrow season. Strong and Hinkle took a fork-horn buck and nine-point buck; Steve, a doe which is legal game in New Mexico.

GD/Electronics and Corporate Personnel Welcome to CRA

General Dynamics / Electronics people stationed in the San Diego area (Information Technology and Military Products) as well as Corporate Office and Advanced Products Department personnel, were reminded this week that all privileges of GD/Convair CRA are open to them.

"We have had good participation in the past, but just in case there is any doubt, GD/Electronics and Corporate personnel are considered just as much members of our CRA as GD/Convair employees," Jack Swank, CRA president, repeated.

Similarly, Corporate and GD/Electronics eligibles are members of Convair Management Club and President Roy Dill emphasized that any eligible non-members would be more than welcome.

Con-Trib-Club also serves all

CONVAIR GOLF CLUB SETS TURKEY MATCH

Convair Golf Club will stage a turkey shoot Nov. 18-19 at Bonita Golf Course open to members from both GD/Convair and GD/Astro.

Starting times may be reserved by calling Juanita, ext. 1158, at Astronautics.

personnel at Plant 1 and 2, Bldg. 19 and the seaplane ramp, regardless of Corporate or division affiliation.

Recently this edition of **General Dynamics NEWS** was changed from "Convair" to "San Diego" in an effort to reflect the coverage available, beyond the confines of GD/Convair alone. For GD/Electronics news contacts are: Info. Tech., Helen Wood CY 8-8331, ext. 11; Milit. Prod., Betty Freeley, CY 8-4641, ext. 1377. Or, call the NEWS office direct, Plant 1, ext. 1071.

130 Square Dancers Flock to Jamboree

Over 130 square dancers from GD/Astro, GD/Pomona and GD/Convair converged on San Diego recently for the All-General Dynamics Hoedown-Jamboree.

Hosted by Convair's Hoedowners, 20 squares were formed.

CRA Commissioner Maury Scholz joined ARA and PRA Commissioners Marty Stutz and John Warren for introductions of club officers and then the three led the Grand March.

Don Browne, caller for Hoedowners, served as master of ceremonies for a program which featured 10 callers.

Next All-General Dynamics Hoedown-Jamboree will be hosted by GD/Astro in San Diego.

Plant 1 Second Shift Boosts Blood Credit

Second-shifters at Plant 1 swelled General Dynamics / Convair's credit at the San Diego Blood Bank by 93 pints at the Oct. 19 collection.

Out of 158 signing for the bloodmobile visit, 24 were rejected, and the rest did not report, said Ken Wulfemeyer of GD/Convair employee services.

Next bloodmobile will be Dec. 7.

'Pilots' Club Memberships Offered at Special Price

Membership in a new flying club are open, at discount prices, to GD/Convair and GD/Electronics embryo pilots.

Jim's Air Service is offering flying lessons at special rates in its new pilots' group, Jimsair Club, to a limited number from General Dynamics. W. W. Frase, is spearheading the drive for in-

terested "bird" people from within the company.

All members of the pilot group must pass a ground school course before progressing to actual flying.

Solo Flyers, CRA-sponsored group, now has a ground school course under way at Jim's Air Service. Rex Robinson, GD/Convair engineer, instructs the school weekly on Wednesdays at 7:30 p.m. Upon completion of the course, students are prepared to pass their FAA examinations for private pilots' license.

Reduced rates for Jimsair Club will be \$6.30 an hour for the plane and \$4 an hour for an instructor. Frase may be reached at ext. 729, Plant 1.

'Sno Ball' Set By Ski Clubbers

Opening of the dry-land ski school, plans for a trip to Mammoth and the second annual "Sno Ball" dance are among activities which will make November a busy month for GD/Convair skiers.

Commissioner Joe Harris said "Sno Ball" is a joint effort by the Far West Ski Association, San Diego Council, slated for Nov. 18, 9 p.m. at the El Cortez Hotel.

Everyone is invited and tickets can be purchased for \$1.00 each at employee services, Bldg. 32. Harris said a fashion show, door prizes and crowning of a queen will highlight the evening's festivities.

In other activity, CRA Ski Club's annual dry-land school will begin Nov. 22.

Persons interested in taking the weekly dry-land instruction and making a Dec. 2-3 bus trip to Mammoth should attend the club's next meeting, Nov. 21, 8 p.m., in the Convair executive dining room, or call Harris at AT-4-0278.



MOPPET—Patricia Ann, 17, daughter of S. W. Mopps, GD/Convair Dept. 6 strikes pose she uses as lead majorette at El Capitan High School. Mother hand-stitched 10,000 sequins to make sparkling costume!

New ES Posters Blossom at Plants 1 and 2

New Employee Suggestion posters blossomed throughout General Dynamics/Convair Plants 1 and 2 late last month emphasizing the fact that "it's the little things that count."

The bigger-than-life poster shows an actual Employee Suggestion, one of the good ideas that have saved the company over \$250,000 this year through the Employee Suggestion plan.

C. H. Hahn, assistant supervisor of cost reduction, stressed the returns from simple ideas. Over \$28,000 was paid out so far this year to over 650 employees for an average suggestion award payment of \$41.96.

"It's a good paying proposition to put your brains to work as well as your hands," said Hahn. "The man or woman at a desk, bench, or on the assembly line is in a position to help the company make money, and at the same time, earn some for himself. He is the closest one to the details of the job and is in the best position to suggest improvements."

"If anyone needs help in expressing ideas, his supervisor or the suggestion analyst is ready to help."

HUNTER SAFETY COURSE PLANNED

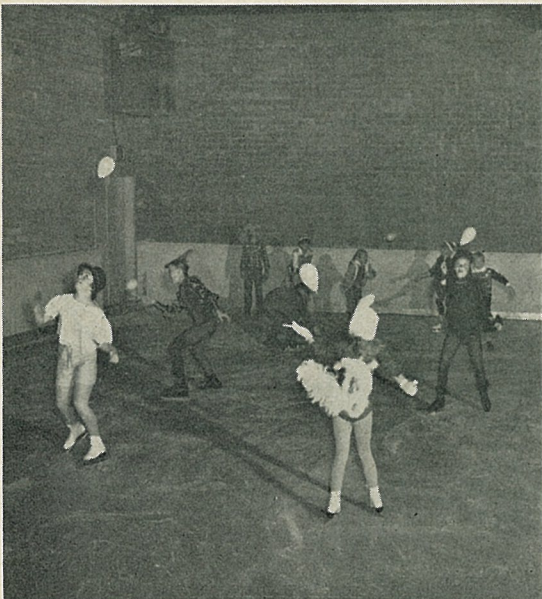
CRA-ARA sponsored hunter safety course for young persons of GD/Convair and GD/Astro families gets under way Nov. 18 at Gillespie Field Clubhouse.

Arnold Schrock will deliver three lectures combined with safety demonstrations for the eighth time this year.

Registration will be taken at the first morning class period, 9 a.m.

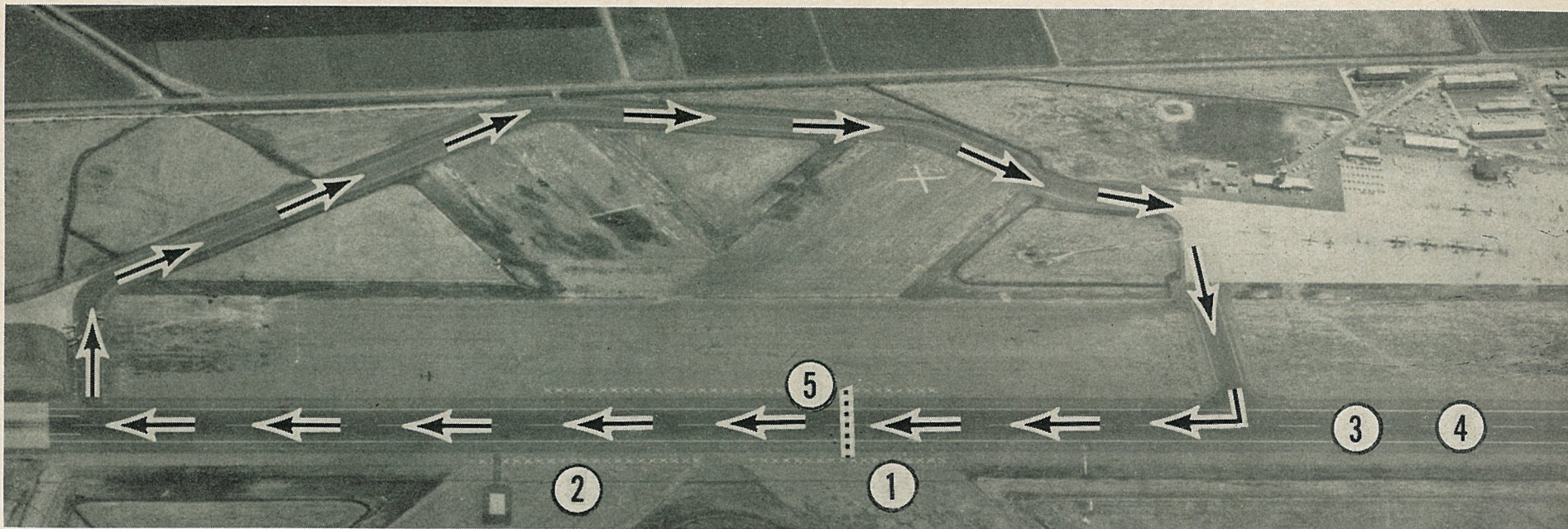
According to California law, the course is required before anyone under 16-years old can obtain a hunting license.

Following a Thanksgiving break, second and third meetings will be Dec. 2 and 9.



GOBLINS AND GAMES—Trick or treating was done on ice skates this year during ARA-CRA Ice Skating Club's annual joint Halloween party at Iceland. A balloon race (left) was one of evening's zaniest highlights. ARA Commissioner Bud

Davies (middle) dressed in tails, tux and wig, faces three "tricksters" before award presentations. Evening got off to slippery start with traditional grand march (right). Prizes went for best costumes.



SPEED TRACK—Aerial shot of Brown Field NAS where an expected 100 drivers will line up for CRA Sports Car Club's annual "Field Day '61" Nov. 19, at 9:30 a.m. Areas of competition shown on map are: (1) Pit and registration (2) Acceleration

and braking (3) Gymkhana (4) Slalom (5) Time trials. Arrows indicate time trial course. Using Asebring scoring system, trophies will be awarded for first through tenth, special plaques for 11th through 15th and dash plaques to first 100 entrants.

CRA Calendar

(Convair Recreation Association has some 40 activities in operation. For information on Convair sports, call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

ARCHERY—Turkey shoot Sunday (Nov. 12), 9:30 a.m., Balboa Park Field Range.

BRIDGE CLUB—Weekly sessions each Tuesday, 7:30 p.m., Barcelona Hotel, 326 Juniper St.

CAMERA CLUB—Meeting Nov. 13, 7:30 p.m., Photo Arts Bldg., Balboa Park.

COIN CLUB—Nomination of officers, quarterly exhibit Nov. 16, 7:30 p.m. Convair cafeteria executive dining room.

FENCING—Workouts and instruction each Friday night, 7-10 p.m., YWCA, Tenth and C Sts.

FISHING—Meeting Nov. 21, 7:30 p.m., Gillespie Field Clubhouse.

GARDEN CLUB—Meeting tonight (Nov. 8), 7:30 p.m., Floral Assoc. Bldg., Balboa Park.

GOLF—Convair Golf Club sweeps Nov. 18-19, Bonita course. For starting times call Juanita, ext. 1158, Astro.

GUN CLUB—Hunter safety course starts Nov. 18, 9 a.m., Gillespie Field Clubhouse. Gillespie Field range open Wednesday evenings, starting tonight (Nov. 8), 7-9 p.m. for trap shooting.

ICE SKATING—Skating sessions each Thursday, Iceland, 6055 Lake Murray Blvd., 6:30-8 p.m.

JUDO—Instruction each Thursday, 7 p.m., CRA Clubhouse.

MODEL RAILROAD—Meetings each Friday, 7:30 p.m., House of Charm, Balboa Park.

MOVIES—Reduced price movies each Friday, Saturday, Sunday at Adams Theater, 3325 Adams Ave. Admission: adults, 50c; children under 12 free if accompanied by adult.

PISTOL CLUB—Next shoot Nov. 12, 9 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB—Meeting tomorrow (Nov. 9), 8 p.m., club headquarters, Harbor Drive.

ROLLER SKATING—Convair skate night Nov. 20, Skateland, Front and G Sts. Free tickets at employee services.

SKI CLUB—Annual Sno Ball, El Cortez Hotel, Nov. 18. Meeting Nov. 21, Convair executive dining room, 8 p.m.

SPORTS CAR CLUB—"Field Day '61" Brown Field NAS, Nov. 19. For information call Tom Kienholz, HO-5-1098.

TENNIS—CRA tourney opens Nov. 18, 9:30 a.m., Morley Field, Balboa Park. Register at ext. 1245, Plant 1.

WOMEN'S ACTIVITIES—Advanced charm school starts tonight (Nov. 8), Convair executive dining room, 7-9 p.m.

Sports & Recreation



DIVERS' AWARDS—Welden Cochran, Delta Divers' awards chairman, presents Chuck Nicklin second place trophy for "Diver of Year." Al Jones, not shown, took first. Jim Carpenter (right) of GD/Astro won third. Larry Cochran (left) was given junior award.

Delta Divers Name Al Jones Year's Top for 257-pounder

Dubbed area's "big fish getters" in San Diego Divers Supply Newsletter, CRA's Delta Divers racked up over 1,000 pounds in black sea bass alone this summer. Al Jones (Dept. 95) was named "Diver of the Year" by club

members at a recent meeting. He landed the season's biggest catch when he nailed a 257-lb. black sea bass off Coronado islands in August.

Second place went to Chuck Nicklin for a 252-lb. black sea bass and third went to Jim Carpenter for a 216-lb. bass.

CRA Commissioner Harry Ruscigno urged all interested potential divers to join in the group's underwater excursions.

"We keep a divers 'feat sheet' which places 10 'feats' before an incoming diver. As he completes each section, a check is placed beside his name until all are finished and a club prize awarded," Ruscigno said.

Additional information can be obtained by calling Ruscigno, ext. 2255, Plant 1.

Deer Hunter Bags Big Lion

W. J. Taylor's big game entry this year was a bit different than he expected.

Taylor (GD/Convair Dept. 91-7) went looking for deer and came back with a 6-ft., 2-in. female mountain lion. He was on a hunting expedition in Laguna Mountains.

Stalking deer on the Lucas Ranch he saw the huge cat coming down the path toward him. He wounded it with his first shot before going for help to cover him while he finished it. "It was a little too dangerous for fun," he said.

However, his trophy brought some rewards. It was eligible for the annual Big Game Contest, and its hide is worth a \$60 bounty from the state game commission.

CRA Flower Show Draws Big Crowd

Over 1500 spectators turned out to see GD/Convair Garden Club's fall show Oct. 29 in Balboa Park's Floral Association building.

Seven turkeys were awarded "best of show" winners.

Selected from 145 entries, judging started at 11 a.m. and presentations were made at 1 p.m.

Turkey winners in chrysanthemums included E. L. Zimmerman, (Dept. 401-5), best single bloom; Arnold Carroll (Dept. 141), best three blooms; Rosalie Swanson (Dept. 117), best three stems of pompons; Tom Cunnion (Dept. 25), best entry of button mums; Mrs. Walter McVey (husband in Dept. 34) best arrangement; and Jean Henderson (Dept. 16), best corsage.

Nadine Barton (Dept. 192) won a turkey for best rose in show and Janice Zimmerman took a blue ribbon for best child's entry.

VICTOR BARDS BOWLS 'TRIPLE' FOR JETS

Victor Bards, Convair Jets' triple-threat bowler, established his claim to that title recently when he threw a "triple" in league competition.

Bowling in Monday's Clairemont league, Bards rolled three straight scores of 160. He will be awarded a shoulder patch for his feat by the American Bowling Association.

Car Clubbers Prep For Field Day '61

Over 100 enthusiastic sports car drivers are expected to compete in CRA-sponsored "Field Day '61" at Brown Field NAS, Nov. 19.

A championship event for all members of San Diego Council of Sports Car Clubs, technical inspection will begin at the track, 8:30 a.m.

Gerry Wright, commissioner, said the meet will be conducted and scored in accord with new Asebring Code. This, Wright explained, means that no awards will be given for individual events, but on the basis of total cumulative scores.

Skill events will include time-trials, a three-minute slalom and gymkhana, and an acceleration and braking test.

Class identification for the slalom, time trials, and acceleration and braking are as follows:

- A—100-199, under 1300 cc.
- B—200-299, 1300-1600 cc and Alfa Guilletta Super Spyder and Super sprint.
- C—300-399, 1600-2700 cc and Porsche Carrera, Carrera G.T., and 1600 super and super 90.
- D—400-499, 2700 cc and over.
- E—500-599, Women under 1600 cc.
- F—600-699, Women over 1600 cc.
- G—700-799, modified.

Trophies will be awarded Nov. 24 to first through tenth in overall positions and special plaques presented for 11th through 15th. Dash plaques will be given first 100 participants.

GD/Convair Sports Car Club



FOUR-POINTS—Joe William (Dept. 401) bagged this four-point buck Oct. 21 in southwest Colorado and promptly entered his kill in Gun Club's "Big Game" contest.

Lecture Scheduled For Camera Club

"Multiple-exposure in 35mm color" will be the subject of a lecture by Ken Rinker, local color-photo instructor, planned for the Camera Club's next meeting Nov. 13, Photo Arts Bldg., 7:30 p.m.

Ron Ainsworth, club spokesman, said this is the same lecture Rinker delivered to the Photographic Society of America at its convention in New York.

members who will act as officials for the competition include: Tom Kienholz, field marshal; Jack Hurt, time trials; Hank Callahan, slalom; Lou Barnes, gymkhana; Spud Riggs, acceleration and braking; Tommy Jackson, awards; Vern Mathews, safety inspection; Bill Wood, publicity; Sid Weiner and Art Address, scoring; and Gerry Wright, facilities.

Additional information can be obtained by calling Kienholz, HO-5-1098.

Tennis Tourney Slated Nov. 18

A "hodgepodge" tennis tourney with chances of victory left to "lady luck" will get under way at Morley Field, 9:30 a.m., Nov. 18.

Players will shift from team to team giving the effect of a hodgepodge and making chances of winning completely equal, Pete Beyrer, commissioner, said.

Turkeys will be awarded winners.

Beyrer urged all GD/Convair employees and dependents interested in a good time and some court experience to attend.

This is the first tournament sponsored by the reorganized tennis club, Stan Griffin and Dennis Sealey, tournament directors, said.

Free to all competitors, tennis balls will be furnished for the day's action.

Interested players should call employee services, ext. 1245, Plant 1, and leave name, department and phone extension.

Night Trap Shooting Set By CRA Gun Club

Trap-shooting enthusiasts will have added opportunity to test their skills when the Convair-Astro Gun Club opens Gillespie Field range for night shooting tonight (Nov. 8) from 7 to 9 p.m.

Jack Swank, CRA commissioner, said the Gillespie range will be available for night firing every Wednesday hereafter.

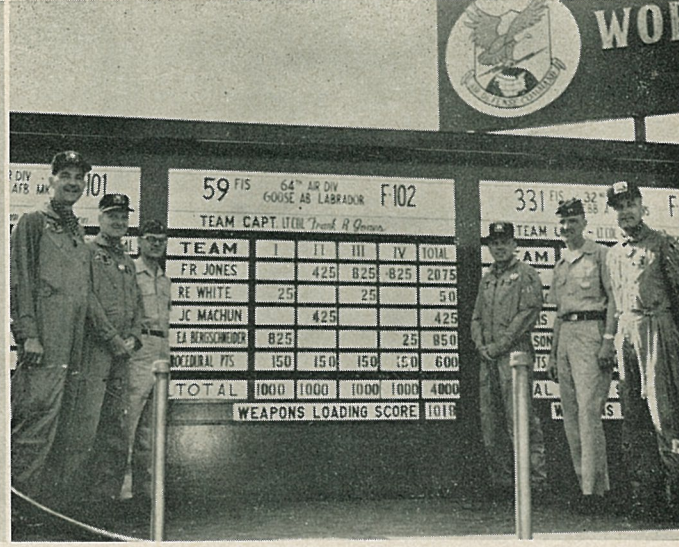
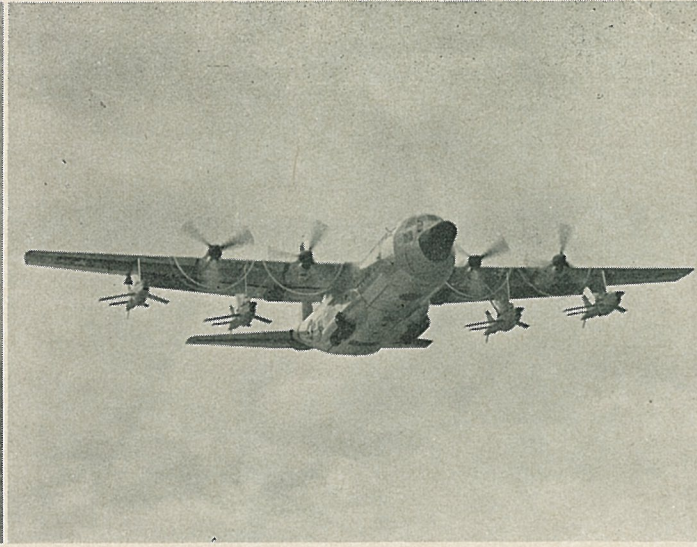
Using six powerful spotlights, Swank said the experience is "entirely different" from normal day shooting.

"When you hit the target each shattered piece can be seen against the darkness."

Swank commented that "unfortunately, we'll have to confine night exercises to traps until problems are worked out for skeet shooting."

TICKETS AVAILABLE FOR SERVICE CLASH

Tickets to the annual Leatherneck Bowl slated for Nov. 11 at Balboa Stadium can be purchased at employee services, Bldg. 32. MCRD will meet Pensacola Naval Air Station at 1:30 p.m. in the service classic.



SHARPSHOOTERS—At far right is championship interceptor team from 59th FIS, Goose Air Base, Labrador, who flew Convair-built F-102 for first perfect score in William Tell weapon meet, Tyndall AFB, Fla. Top F-102 crew and overall meet winners are (from left) Lt. Col. Frank R. Jones, team captain; Capt. Ethan Berg-

schneider; Lt. John R. Osborne; Capt. Richard E. White; Capt. Manford C. Holly Jr.; and Capt. John C. Machun. Capt. Holly and Lt. Osborne were team alternates. Center shot shows GC-130 craft carrying four Ryan Q2C "Firebee" drones to firing range. At left, jet drone is plucked from Gulf of Mexico by helicopter.



ON THE WIRE—Sam Stevens of GD/Convair interceptor service engineering grabs phone at SD to take down daily report on F-102 and F-106 performance at William Tell called in by GD/Convair reps at Florida site. Gathering around to hear results are (from left) E. C. Palmer, S. L. Nichols, W. W. Fenton, D. F. Houtz.

GD/Electronics Barge Will Do ASW Research

ROCHESTER, N. Y.—A self-propelled barge, equipped for anti-submarine research and designed as a floating General Dynamics/Electronics test facility, is en route from Florida and will be stationed on Lake Seneca, 50 miles southeast of here.

Harry B. Miller, manager of advanced development, Electro-Acoustics Laboratory of GD/Electronics' Military Products division, viewed the new facility as a significant addition to ASW research and development efforts.

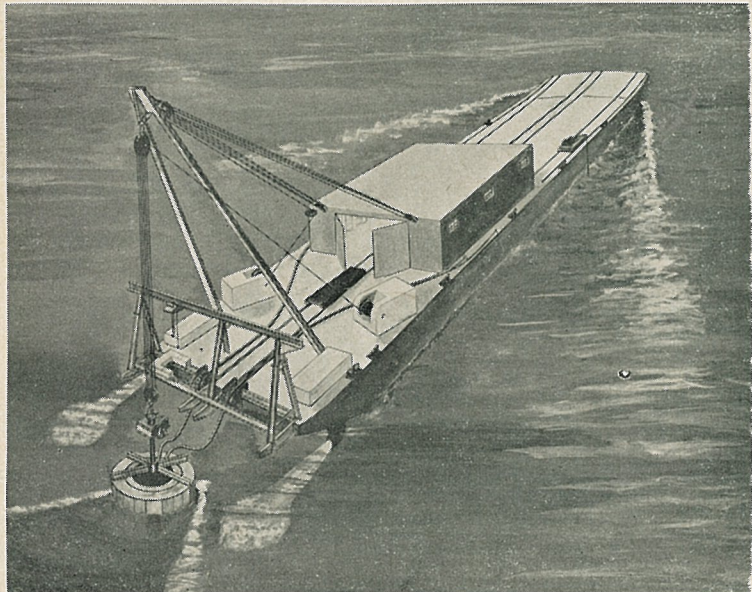
For most operations the barge will have a crew of three, under Miller's direction. They are Leonard Robinson, principal engineer; Robert Jensen, electronic technician; and Edwin Knapp, barge operator.

The barge will operate from 180 feet of lake frontage, leased for the purpose. Seneca is one of the scenic Finger Lakes. It is about 40 miles long and three miles wide at its broadest point. It was chosen for its depth (600

feet, by far the deepest of any U. S. lake other than the Great Lakes) and thermal gradients that are similar to those in large areas of the Atlantic Ocean. The lake rarely freezes over and waves will never be high enough to interfere with barge operations.

The barge, a converted oil tanker 165 feet long and 36 feet wide, was outfitted in Miami, Fla., under supervision of Electric Boat Division of General Dynamics. It is self-propelled by twin underwater "Hydrojets" which give it a top speed of 8 knots. It is equipped with a diesel-driven 200-kilowatt generator to power electronic equipment. This ultimately will be raised to 400-kilowatts, providing power for even the largest sonar transducers.

The barge is moving up the Atlantic coast (probably using the inland waterway) and will cruise up the Hudson River, reaching Seneca Lake via the Barge Canal.



HEADING NORTH—This is artist's conception of research barge presently en route to Seneca Lake near Rochester, N.Y., where it will be used for anti-submarine test purposes by General Dynamics/Electronics.

Labrador F-102 Team Wins William Tell With Perfect Score

An F-102 team from Labrador roared into top spot as overall winner of William Tell 1961 for the only perfect missile firing score in the USAF interceptor weapons meet at Tyndall AFB, Fla.

Pilots from 59th Fighter-Interceptor Squadron, Goose Bay, flying Convair-built F-102s, scored four perfect 1,000-point missions, including three jet targets destroyed with dead-center missile hits to take championship of Category II. Team captain, Lt. Col. Frank R. Jones, led his men as top individual William Tell sharpshooter with three perfect missions and two dead drones.

Perfect weather in the 10-day meet, calendared from Oct. 23-Nov. 3, saw all 13 top interceptor teams in three classes, F-102s, F-106s, McDonnell F-101s, completing all of their missions in six days.

Team from 456th FIS of Castle AFB, Merced, Calif., led the field in Category III, or F-106, competition. Team captain was Lt. Col. James L. Price.

Other team standings on the weapons meet scoreboard in F-102 category were: second, 182nd Air National Guard, Kelly AFB, Texas; third, 317th FIS, Elmendorf AFB, Alaska; fourth, 3558th FTS, Perrin AFB, Texas; 331st FIS, Webb AFB, Texas.

F-106 teams stood: second, 498th FIS, Spokane, Wash.; third, 539th FIS, McGuire AFB, N.J.; fourth, 11th FIS, Duluth, Minn.

Top F-102, F-106 teams and winner of the F-101 category (456th FIS, Wurtsmith, Mich.) had their names added to the permanent Richard I. Bong trophy, named for the World War II ace, which remains at the Air Defense Command's Weapon Center. Each team received exact replicas.

J. H. Famme, General Dynamics/Convair vice president and general manager, flew to the Florida weapons center to present Convair trophies to winning F-102 and F-106 teams at last Thursday's ceremonies.

This was the first year that F-106s had scrambled in the Air Defense Command's meet, held every other year to test efficiency of defense fighter weapon systems in combat conditions. Convair F-102s first took active part in 1958.

Teams in each interceptor category scrambled into action this year under realistic combat conditions against an "invading" force of radio-controlled jet drone targets.

The drones, Ryan Q2C Firebees made in San Diego, were launched from ground and air to provide aerial bull's-eyes. They carried electronic equipment to record and transmit "area hit" scores. Judges also monitored conduct of each mission by television broadcasts from cameras aboard chase planes.

F-102s, firing Hughes Aircraft

GAR (Guided Air Rocket) missiles, and F-106s, equipped with both Hughes' GAR Super Falcons and Douglas Aircraft Co.'s MB-1 Genie nuclear rockets, were pitted against the 600 mph drones in low, high, and very high altitude missions, both day and night.

Scoring was more complex than just hitting or nearly hitting a target. Fighter crews won or lost points on such procedures as time required to "scramble," voice, firing, recovery, and off-target maneuvers.

According to GD/Convair reps on the spot, F-102s and F-106s came through the strenuous exercises in good commission with only minor discrepancies.

Texas Students See Daingerfield

Daingerfield Division of General Dynamics/Pomona was host Oct. 23 to approximately 30 senior engineering students and faculty members from University of Texas in Austin.

Students and faculty members were escorted on a tour of the facility by Daingerfield employees who are engineering graduates of the university. Escorts included: H. D. Royce, J. R. Nazal, J. A. Cawthorn, J. D. Meneff, J. E. Hawkins and Paul Matkin, all of the jet engine department. Matkin was in charge of the tour.

The visit to Daingerfield is an annual affair. Faculty member in charge of the visiting group was Prof. Robert N. Austin.

ELECTROFORMING TOPIC FOR TALK

J. C. Ladd, General Dynamics/Fort Worth manufacturing research engineer, recently addressed the North Texas Chapter, American Society of Tooling and Manufacturing Engineers. His subject was "Born-to-Shape Parts and Tools by Electroforming."

New 'Roll-Out' Box Designed For Stabilizer

A box, at least a story-and-a-half high, that can be opened in a matter of minutes, has been designed and built in General Dynamics/Convair shipping department, for Convair 880/990 vertical stabilizers.

Dreaming up unusual packaging ideas to fit and protect fragile aircraft parts is the job of J. J. Janssen, Dept. 14 packaging specialist at Rose Canyon Warehouse.

His concept of a container which can be rolled away from its contents is unique in the packaging business. This appeared to be the only kind practicable for the huge stabilizer—26 feet from tip to tip and 10 feet across the widest part.

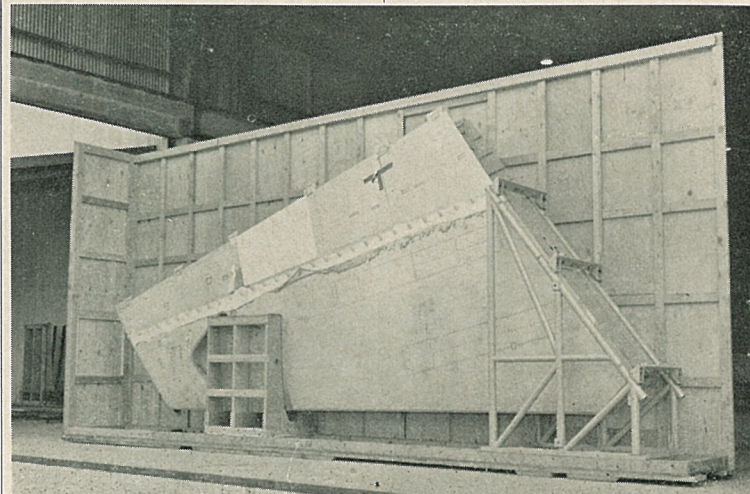
The box, 14 ft. high by 29 ft. long by 4 ft. wide, is movable on its own wheels. One open end can be unbolted in a few minutes; the entire wooden structure rolled away, leaving the stabilizer standing clear in its inner fixtures bolted to a solid base.

The stabilizer can be uncatered entirely and ready for installation on a Convair jet transport in less than half an hour!

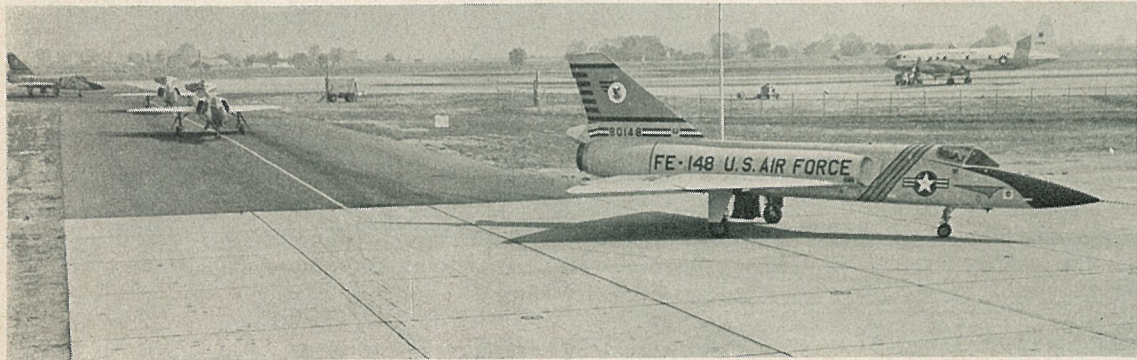
"This, in itself, means money in the pocket of the customer airline," said John Stoffel, shipping foreman. "Every minute counts when a plane is grounded for a part replacement. For instance, it could cost as much as \$5 a minute for a plane to be out of service. By cutting an hour off uncatering time, we can save a customer several hundred dollars."

The container serves a double purpose. It also can be used for shipment of the damaged part to an overhaul base. The inner fixtures—one of steel and the other, a wood and steel cradle—will be returned to GD/Convair for use in future shipments.

John Wood and Walt Ahrens, packaging draftsmen in shipping, were responsible for engineering the vertical stabilizer container to Air Transport Association regulations. The container is sturdy enough to travel by any type of surface transportation—boat, rail, or truck.



PERFECT FIT—Convair 880 vertical stabilizer rests on solid fixtures within sections of new-type container, designed especially to stabilizer's 26x10-ft. dimensions.



WELCOME HOME—Top F-106 team at recent William Tell weapons meet, Tyndall AFB, Fla., returns to home runway, Castle AFB, Calif., to meet enthusiastic welcome.

REAL/Varig Reps Gather At GD/Convair

Engineering, training, and line people from throughout the system of REAL/Varig Airlines are at General Dynamics/Convair for their first maintenance course on the Convair 990.

Twenty-five representatives from such points as Porto Alegre, Rio de Janeiro, Bogota, Caracas, Mexico City, Miami and Los Angeles, arrived at the San Diego plant early this month for the customer service training. The course began Nov. 6 and will extend to Dec. 15. It covers power plant installation, aircraft systems, electronics, electrical, air systems, instrument familiarization, cockpit procedures trainer.

Conducting the sessions are Walt Kinney, Jim Eschwege, R. F. Nixon, Paul Philp, H. Hendricks of customer service training.

A special electrical and electronics course is scheduled for other REAL/Varig personnel after the first of the year.

Heading the contingent is Luiz Robatino, REAL/Varig customer representative based at San Diego. Others are: Hans Joas, Ricardo Culman, Ibero Freitas, Edmar Filippi, Michael Konotop, Jose Severino Araujo, Guido Luchese, Jony Weber, Enio Stuermer, Igor Wolwacz, Gilson Meinhardt, Ehrhardt C. Lubeck, Al-

(Continued on Page 2)

Electric Boat Hiring 2,000

A near-record work load consisting of construction contracts for 11 nuclear submarines will mean a record work force for General Dynamics' Electric Boat Division (Groton, Conn.) next year.

The division announced that it will employ upwards of 2,000 additional production personnel within the next six months, topping its World War II all-time high of 12,412. Current employment stands at 10,667.

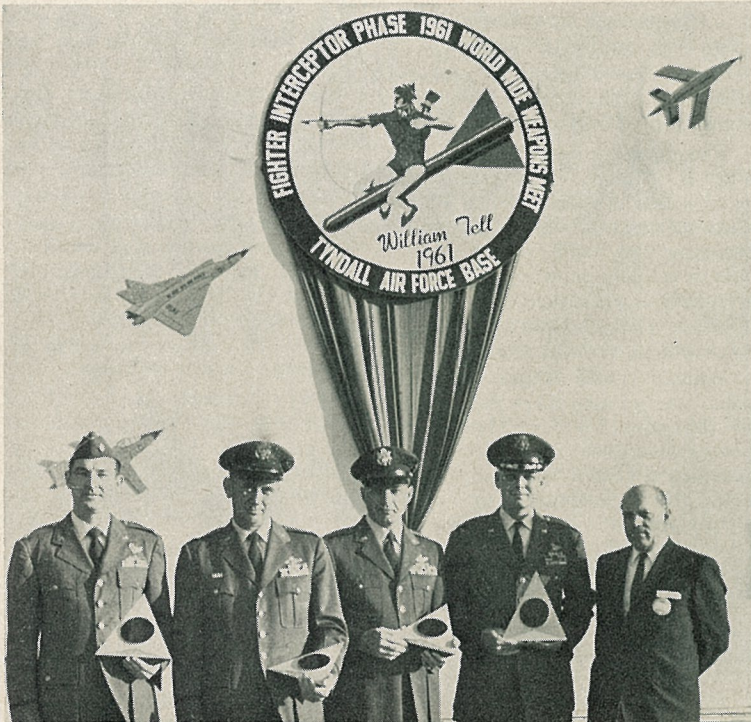
Hiring started this month for experienced shipfitters, chippers, welders, riggers, outside electricians and pipefitters, including rehiring many trades personnel terminated in the past for lack of work.

Sonic-Booming Hustler Aids in Noise Research

A Mach 2 B-58 Hustler was recently used in a series of tests that may help the Air Force to control and possibly lessen the effects of sonic booms.

Two high-speed interceptors—the F-104 and F-106—were also used in making a total of about 50 "sonic boom flights" at Air Force Flight Test Center, Edwards AFB, Calif.

Sponsors were the Air Force, Federal Aviation Administration,



AWARDS—In top photo, J. H. Famme, GD/Convair vice president (far right), lines up with top F-102 and F-106 team captains at close of 1961 William Tell meet early this month. From left, Lt. Col. Frank R. Jones, 59th FIS, Goose Bay, Labrador; winning F-102 group; Maj. W. L. Crosby, 498th FIS, Geiger AFB, Wash., second F-106 team; Lt. Col. James L. Price, 456th FIS, Castle AFB, Calif., first-place F-106; Lt. Col. Nowell O. Didear, 182nd FIS, Texas ANG, F-102 runner-up. In lower picture, top F-106 pilots show trophy to Maj. Gen. Conrad F. Necrason, 28th Air Division Commander (left), and Brig. Gen. T. K. McGehee, San Francisco Sector commander (far right). Crewmen are: Capt. E. F. Dencklau, Capt. Rex D. Howerton, Lt. Col. James Price, Capt. W. A. Curnutte. —AF photos.

General Atomic Nuclear Reactor Applied to Crime Detection

A new method of scientific crime-detection that employs atomic energy to expose invisible,

telltale bits of evidence was described to law enforcement officers recently by Robert M. Watkins, General Atomic Division radiochemist.

The California Association of Criminalists, whose members operate crime laboratories of police and other agencies, heard a report on the new, ultrasensitive technique that uses penetrating radiation from a nuclear reactor to reveal and identify evidence so minute that it cannot be seen under a microscope.

The technique is known as "neutron activation analysis."

General Atomic and the Los Angeles Police Department are working together on applications of the technique, using the neutron radiation produced in a General Atomic TRIGA research re-

(Continued on Page 2)

GD/FW To Study 'Fallout' in Icy Tests For Army

GD/Fort Worth nuclear engineers and health physicists will take their Geiger counters to Camp McCoy, Wis., this winter to see how effectively Army troops can decontaminate radioactive fallout in below-freezing weather.

Shielding effects of snow and ice against fallout also will be checked under terms of a recent \$75,000 contract between GD/Fort Worth and U. S. Army.

A team of seven, headed by W. H. Heneveld, senior nuclear engineer, is scheduled to depart for Camp McCoy in late November to test equipment and conduct "dry" runs.

Other engineers on the team include C. C. Kilmer, engineering chemist; Charles H. Fletcher, design specialist; H. G. Bradbury, senior nuclear engineer; and J. Barnard, nuclear engineer. Health physicists who will make the trip are W. R. Miller and H. W. Bryant.

Miller was scheduled to visit the test site this month to get air, soil, water and vegetation samples, from which a natural background for radioactivity can be ascertained.

"To make the simulated fallout, we'll dissolve lanthanum pellets, then spray the liquid into a mass of sand. Silicone will then be sprayed over the sand and the mixture will be baked," Frank Paschal, health physics administrator, said.

"This sand will be spread on the ground, on roofs, and elsewhere. Army personnel will then move into the area with a number of decontaminating instruments — including fire hoses, mechanized sweepers, etc.

Types of surfaces contaminated will include bare frozen ground, bare asphalt pavement, bare concrete pavement, packed

snow, packed snow covered by loose snow, and bare roofs.

Tests will be conducted under a variety of temperature ranges: from minus 10 to 5 degrees Fahrenheit; from 5 to 20 degrees; and from 20 to 30 degrees.

"Temperatures at the Wisconsin site customarily run this cold during the month we'll be testing," Paschal said.

In another test, GD personnel will disperse simulated fallout onto four or five acres of buildings, land and pavement of Camp McCoy. Military personnel will then move in on a logistic exercise to decontaminate the area.

GD/Fort Worth will assume responsibility for providing health physics and radiological safety services for the Army personnel, technical measurements, disposition of waste and residual contamination, and data reduction. Paschal explained that exposures would be very small, probably about 1/10,000th of what would result from an actual nuclear explosion.

NEW ELECTRONIC TELEPHONE SYSTEM PUT IN OPERATION

The country's first electronic private branch telephone exchange has gone into full commercial operation at Southern Pines, N. C.

The DYNALOGiC all-electronic system was designed and produced by General Dynamics/Telecommunication, makers of Stromberg-Carlson telephone equipment. It was put into operation by the United Telephone Company of the Carolinas, Inc., a subsidiary of United Utilities Incorporated.

The new Stromberg-Carlson electronic PBX is designed to improve efficiency in business communication, serving as a private switchboard. The second phase, a community-wide electronic dial telephone system, has been sold and will go into operation in a northeastern state next year.

The DYNALOGiC system, either in private branch exchanges or in community-wide exchanges, will provide subscriber services that were rarely practical before. It operates many times faster than conventional electromechanical systems and sharply reduces space requirements and maintenance.

(Continued on Page 2)

Von Braun to Speak For Mgt. Club Mon.

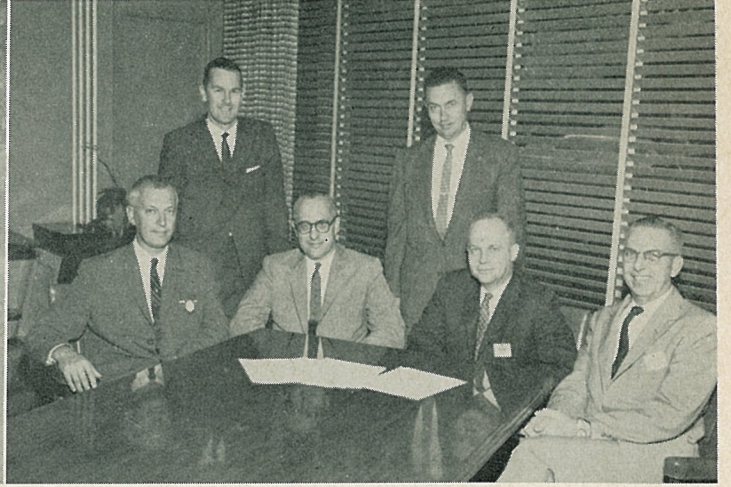
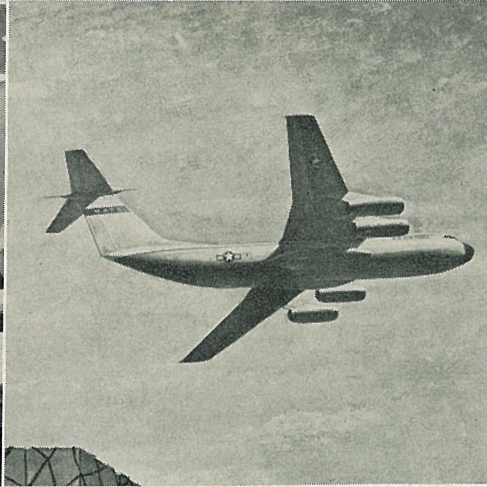
Dr. Wernher von Braun, noted scientist and rocket expert, will appear before the General Dynamics/Astronautics Management Club at its Nov. 27 meeting at International Room, El Cortez Hotel, San Diego.

He will speak on "The How and Why of Outer Space."

Dr. von Braun is director of National Aeronautics and Space Administration's George C. Marshall Space Flight Center, Huntsville, Ala.



MODERN TOUCH—Desk turret used with DYNALOGiC electronic private branch telephone exchange is demonstrated at Southern Pines, N.C. It was produced by General Dynamics/Telecommunication Division.



C-141 TEAM—At left, part of engineering group at GD/Convair beginning design of C-141 empennage under recently-awarded subcontract. Center is artist's conception of C-141 cargo jet transport to be built for Air Force with Lockheed-Georgia Co. as prime contractor. Among those heading effort at San Diego are (far right), seated from left, D. H. Koozer, Lockheed C-141 engineering representa-

tive; John Bergstrom, GD/Convair assistant chief engineer; N. F. Hill, Lockheed material administrator for C-141 subcontracts; W. W. Beal, Lockheed purchasing representative; (standing) D. R. Stewart, GD/Convair contract administrator for C-141; and James M. Adamson, C-141 project manager. Initial contract calls for six tail sections with 1963 delivery.

Redeye Fired For Kennedy

The Redeye air defense missile was fired publicly for the first time last month when the Army demonstrated its new weapons and techniques to President John F. Kennedy, Secretary of Defense Robert McNamara, Army Secretary Elvis Stahr, the Joint Chiefs of Staff and members of the press at Ft. Bragg, N.C.

Redeye is being developed for the Army and Marine Corps by General Dynamics/Pomona. It is

a battlefield weapon designed to protect front line troops against low-flying aircraft. It is shoulder fired, and in appearance resembles the World War II anti-tank "bazooka."

During the demonstration, which lasted slightly over four hours, the President witnessed an airborne drop of a reinforced rifle company and its equipment, the firing of many modern Army weapons, a demonstration of special warfare and ranger training and effectiveness, and inspected a company of the 82nd Airborne Division.

This was the first large-scale Army demonstration of strength attended by President Kennedy since he assumed office.

F-102 Unit Honored As Air Guard's Best

Most effective F-102 unit in the Air National Guard is the 125th Fighter-Interceptor Group based at Imeson Airport, Jacksonville, Fla., according to a decision of the National Guard Bureau in Washington, D. C.

In recognition of the group's superior rating it received the Operational Readiness plaque from the National Guard Association at its general conference last month.

The 125th, of which 159th Fighter-Interceptor Squadron is the flight unit, rated higher than any other Air National Guard unit flying F-102s, reported C. H. Greenfield, General Dynamics/Convair field service rep. The 159th FIS has been flying Convair F-102s for 14 months.

REAL/Varig Reps At GD/Convair

(Continued from Page 1)

berto Azevedo, Eduardo Bordasch, George Wanderley, Gihon Santos, Deley J. Vilalva, all from Porto Alegre, Brazil; Waldir Zakowicz, Caracas; Julio Parro, Bogota; Fernando Carreo, Mexico City; Germano Guths, Rio de Janeiro; Oswaldo Silvestri, Miami; Dirceu Braun and Thomas Camarrano, both from Los Angeles.

ASME Reps. Selected For GD/Astro Points

The San Diego chapter, American Society of Mechanical Engineers (ASME) has announced appointment of area representatives to encourage participation in ASME affairs by GD/Astro employees eligible for membership.

ASME representative at GD/Astronautics is R. O. Martin, Dept. 541-4, ext. 1631, and area representatives are R. J. Barrett, ext. 2928 (Bldg. 1 and 26); R. V. Madonia, ext. 3164 (materials building and Sycamore); and B. B. Spillane, Plant 1, ext. 739.

Representatives in Bldg. 3 are A. J. Maury, ext. 2891 (4th floor); J. T. Heffron, ext. 1641 (floors 5 and 6); and Carole Johnson, ext. 2474 (3rd floor). In Bldg. 4 they are C. F. Johnson, ext. 2276 (components test lab); P. H. Schuetz, ext. 3495 (systems test lab); while E. A. Kaelin, ext. 715, takes care of remaining portions of Bldg. 4 and Bldg. 5.

Reactor Used As 'Detective'

(Continued from Page 1)

actor to analyze samples of invisible revolver shot residues taken from the hand of a person suspected of having fired a gun.

The samples were provided by Ray H. Pinker, chief criminalist of the Los Angeles Police Crime Laboratory, and were obtained by washing the hand with a special solution. This solution was then irradiated with neutrons in the TRIGA reactor and tested for evidence of powder residues.

Watkins said that, although other techniques have been tried in the past for identifying gun powder residues, none has proved practical. Activation analysis, he said, allows investigators for the first time to detect traces of powder residue, as small as 40 billionths of a gram, left on the hand of a person firing a gun.

Through perfection of the technique, in its application to crime detection, it may become possible to examine a tiny piece of hair snagged in a victim's fingernail and identify one in a million particles matching those of a suspect's hair. A fleck of paint on an automobile bumper, too small for even the sensitive spectroscopic, may form the link with another car in a collision. It may prove possible to examine a sliver of glass found in a trouser cuff and show that it came from a broken window at a robbery scene. Or the mere trace of a smear from the hand that fired a murder weapon may be sufficient to blast a suspect's alibi wide open.

In analyzing blood stains, activation analysis promises to be far more penetrating than conventional chemical tests used to determine blood identity, Watkins said.

Electronic Phone System Installed

(Continued from Page 1)

nance costs for telephone companies.

To business users, the electronic PBX offers a whole range of new services.

For instance, at Southern Pines there is no need for a person to wait for a late call. By dialing one digit, and then his home phone number, he can have calls automatically forwarded. During the work day the same "call forwarding" procedure can be used to have calls automatically "follow" to another office.

Also, when the PBX attendant finds a line in use, she touches one key that tells the electronic circuits to "remember" that there is an incoming call. As soon as the line is free, the waiting call is put through automatically.

Electronic switching also permits dialing a third party (for additional information, for example) without breaking the connection with the original caller.

Similarly, the Stromberg-Carlson electronic PBX permits an individual to transfer a call directly to another telephone by simply dialing a single digit and then the new number.

Project System Adopted on C-141

Team effort will keynote General Dynamics/Convair activities during work on its portion of the C-141 cargo jet transport for the Air Force.

The entire program, under which GD/Convair will build C-141 tail sections for Lockheed-Georgia Co., prime contractor, is being set up on a functional project system, explained James M. Adamson, project manager.

Every function involved throughout the entire plant is represented in the C-141 project organization rounding into shape this month.

J. H. Famme, GD/Convair vice president and general manager, pointed out that the project team system will streamline activities as the C-141 program progresses from design to production.

"We feel that this arrangement of pulling key men from all departments into a closely-knit team to push through one particular program will facilitate all efforts," he continued. "GD/Convair feels that it will prove the most effective and efficient system for this project."

"I know that everyone throughout the company will give the C-141 organization the fullest support and cooperation."

Named to the C-141 project are:

Contracts, D. R. Stewart, contract administrator; engineering, R. W. Miller, project engineer; planning, E. H. Cooke, program analyst; logistics, C. B. Robinson, service parts supervisor; operations planning, Terry Kell, industrial engineer, manufacturing

project planning; production, N. P. Pearson, superintendent.

Manufacturing control, M. L. Sweeney, manufacturing control general supervisor; tooling, O. L. Hunley, tool project engineer; material, V. M. Burns, purchasing agent; quality control, T. W. Brotherton, general supervisor inspection; controller, J. A. Dematteis, administrative accountant; communication, Leslie Hawson; systems and procedures, R. F. Shane.

Lockheed personnel based at the GD/Convair plant are: D. H. Koozer, C-141 engineering representative and his staff, William Rich, Joe Newton, William Young. W. W. Beal, C-141, purchasing representative, will have headquarters in San Diego and a quality control representative will also be located here after the first of the year.

At present GD/Convair engineers are working on initial layouts of the C-141 empennage. Current contract, awarded in mid-October, calls for five production articles and one static test tail section. Test article will be delivered in March of 1963, first production article in May of the same year.

At peak of engineering effort, anticipated in mid-1962, there should be between 60 and 70 engineers assigned full time to the C-141 project, said Miller, project engineer.

Carrying out the cooperative theme, weights, stress, structural design engineers will be consolidated in one section of Bldg. 51 third floor. Also physically located in the same area will be representatives from tooling, factory, planning, and material.



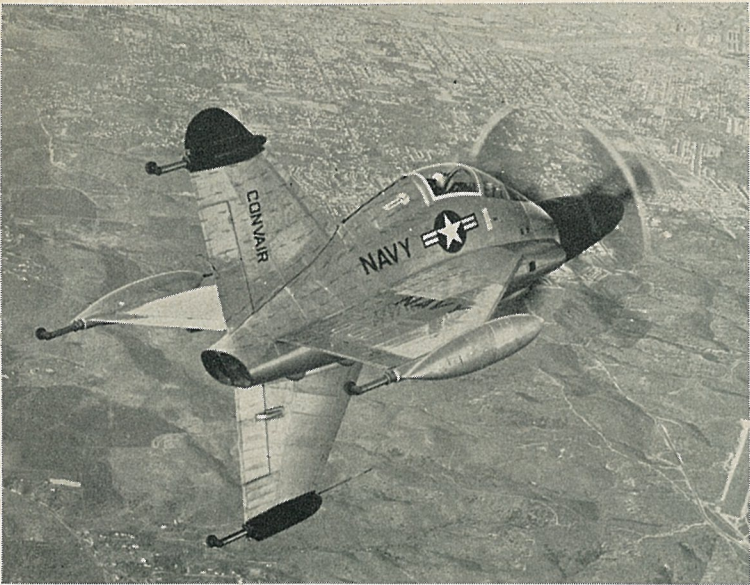
BRAZILIAN "STUDENTS"—Snapped beside first Convair 990 going to Brazilian airline, REAL/Varig, are first group of men at GD/Convair for customer service maintenance course.

General Dynamics NEWS

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COTTON PICKIN'—Diane and Vicki, daughters of Aron Marcom, Astro assistant supervisor at Altus AFB, snuggle down gleefully in cotton near Atlas off-site base. Father's assignment to Oklahoma has given San Diego girls contact with contrasting part of country.



ANOTHER DELTA—Among most unusual aircraft built at San Diego was XFV-1, vertical takeoff fighter nicknamed "Pogo."

Novel 'Pogo' Designed For Convoy Task

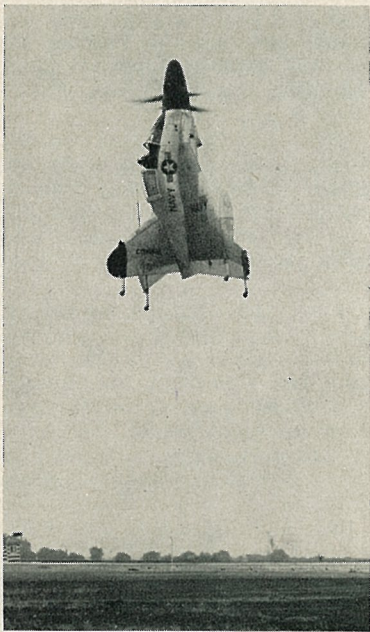
(In 72nd installment of history of General Dynamics/Convair products, XFV-1 gets attention as another application of delta wing.)

A second experimental Navy plane was the XFV-1 Pogo, winner of a 1951 design competition for a convoy escort fighter, capable of taking off from, and returning to, the afterdeck of an ordinary cargo ship. The Convair configuration employed a short, fat fuselage; stubby delta wings, and a pair of long vertical fins, one mounted above the fuselage and one below. On the ground the plane sat nose-up, resting on four caster-like wheels at the tips of the wings and fins.

At takeoff the Pogo ascended vertically until well clear of the field, then nosed over into conventional attitude to attain speeds of more than 500 mph. To land, the pilot pointed the nose skyward and settled back to the ground by "hanging on the props." A special power plant was developed for the Pogo, combining an Allison YT40-A-14 turboprop engine with a pair of 16-foot coaxial, contra-rotating, turbo-electric propellers made by Curtiss-Wright.

Since no man had flown such a craft, engineers evolved a "tethered flight" program, starting with a test stand that held a power plant and part of an XFV-1 fuselage. Under the pilot's control, this simulator could rise five feet.

Next, an elaborate mechanism for limited flight was built under the 184-foot roof of a Navy hangar at Moffett Field, Calif. Cables rose from the nose of the plane to a powered drum at the top of the hangar, running thence to a counterweight at one side. A system of cables and tension regulators was attached to the tail, letting the aircraft rise free-



GOING UP—Straight up goes "Pogo" before making transition to level flight.

ly but limiting its lateral travel.

J. F. (Skeets) Coleman, engineering test pilot, made scores of short vertical flights in the hangar during the summer of 1954, feeling out the plane's controls and characteristics. On August 1 he made the first untethered flight outdoors, rising to 20 feet; over the next two days he worked up to 150 feet. "It's more maneuverable and responds faster than any plane I've ever flown," Coleman reported. "We'll do a little more maneuvering, try a few tricks, as we go along."

Pogo was returned to San Diego and based at Brown Field Naval Auxiliary Air Station while Coleman continued testing, until he had taken the aircraft to several hundred feet, nosed it over to 30 degrees, and traveled the length of the runway. He made the transition to full horizontal attitude on a flight the first week in November, cruising for 20 minutes before returning to land on a 50-foot square. For this, the first successful VTO flight in history, Coleman was awarded the Harmon Trophy.

Lachman Named to Board Of 'Seven Seas University'

A GD/Convair administrator was recently selected to join such men as Ralph Bunche, David Saranoff, and the Crown Prince of Japan as a board member for the University of the Seven Seas.

Millard S. Lachman, executive development administrator, long active in San Diego educational

circles, was elected to a three-year term for the "floating" university.

"Approximately 400 students from every nation in the free world spend a semester on board the S.S. Jerusalem participating in formal class study and touring areas of debarkation," he said.

Currently chairman of the San Diego Chamber of Commerce Education Committee, Lachman explained that "the university is a broad and exciting new concept in international education using the world as its lab."

San Diego has been selected as West Coast port with the fall semester, 1962, slated for first voyage.

Lachman, a six-year seminar leader in UCLA's graduate school of business administration, recently completed his 16th year at GD/Convair.

PHYSICIST OFFERS NOVEL THEORY ON CREATION OF SEAS

Modern scientific progress has been the result of many "off-beat" observations, but few can match the experience of a GD/Convair senior staff scientist, Dr. J. J. Gilvarry.

Sitting down for lunch in a Milwaukee restaurant five years ago, Dr. Gilvarry was intrigued by the apparent "roundness" of the oceans on a lighted globe advertising beer.

Curiosity prompted research resulting in a radical new theory, published under Dr. Gilvarry's byline as the lead article in *Saturday Review*, Nov. 4, which holds the oceans were formed by huge meteorites striking the earth.

"If this theory is correct, life in other solar systems with the same characteristics as ours would seem likely," Dr. Gilvarry explained.

Dr. Gilvarry, a recent addition to the physics section, was with RAND Corporation, Allis-Chalmers and worked on the Manhattan Project before coming to GD/Convair.

Support Supervisor Chosen For Survey

J. I. Bogle, GD/Astro support documentation supervisor, was selected by the National Security Industrial Association to participate in a material handling survey at Alameda Naval Air Station.

The survey was conducted by leading material handling specialists from government and industry, and concentrated on handling, storage and transportation.

GD/Convair Machine to Reduce Costs and Production Time

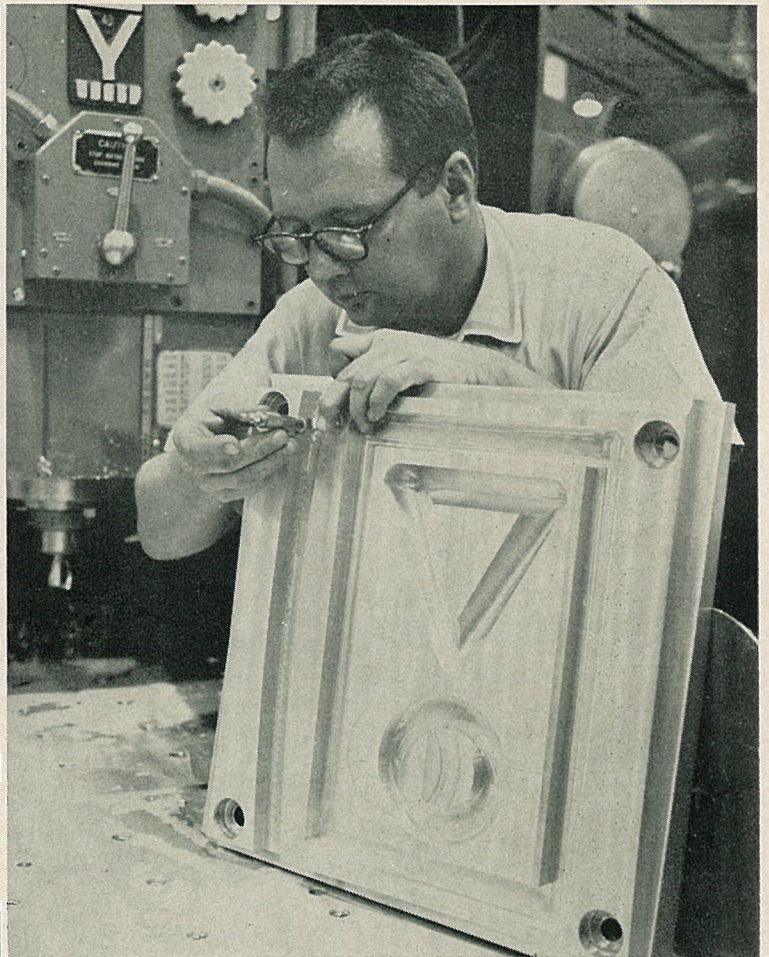
First automatic milling machine purchased by General Dynamics/Convair for use in its commercial programs is now undergoing acceptance checkouts. Another, a profile contour milling machine, is on order for mid-1962.

Although numerically-controlled machines have been in use at Plant 2 the last few years during the F-102 and F-106 programs, they were installed and owned by the Air Force. The Milwaukee Matic machine installed in Bldg. 1 at Plant 1 the first of this month is the first ordered by GD/Convair.

Two others are located in the San Diego area—one at GD/Astronautics main plant, and the other at Fluidgenics Co., National City.

The new machine, expected to cut costs and production time in future programs, should be turning out parts for both GD/Convair and GD/Electronics within the next few weeks, said J. R. Condit, facilities equipment engineer.

All operations—milling, drilling, tapping (or threading), boring—are controlled by punched tape to tolerances as close as .0005 of an inch. It stores 31



ON THE NOSE—R. F. Stygar of GD/Astronautics uses micrometer to check accuracy of shapes milled to commands from GD/Electronics' C-180 Digimatic numerical control. Device works to .001-inch tolerances.

New Numerical Control Mill Works in Three Dimensions

Newest and most advanced among a variety of numerically-controlled shop equipment in use

at General Dynamics/Astronautics is the versatile Morey contour milling machine placed in service recently.

The device works to .001-inch tolerances in three dimensions with only one fixture setting, in response to commands from a "C-180" Digimatic numerical control system built by Information Technology group of General Dynamics/Electronics.

(Other numerical control equipment in use at GD/Astro includes a Milwaukee Matic "machining center" and two Burgmaster turret drills. These are controlled by a punched-tape method for work in two dimensions.)

Because it requires no special tooling or templates, the new contour milling machine produces Atlas missile parts economically, precisely and efficiently.

It automatically turns out parts previously produced by forging or casting.

Machine instructions are recorded with a special-purpose computer as a series of magnetic signals on one-half inch recording tape. When the programmed tape is "played back" through the C-180 Digimatic, the machine head and work table are controlled continuously throughout the entire tool path.

The work table has a movement range of 48 inches in the "X" (right-left) axis, while the head can move a like distance in the "Y" (forward-backward) axis and 30 inches in the "Z" (up-down) axis.

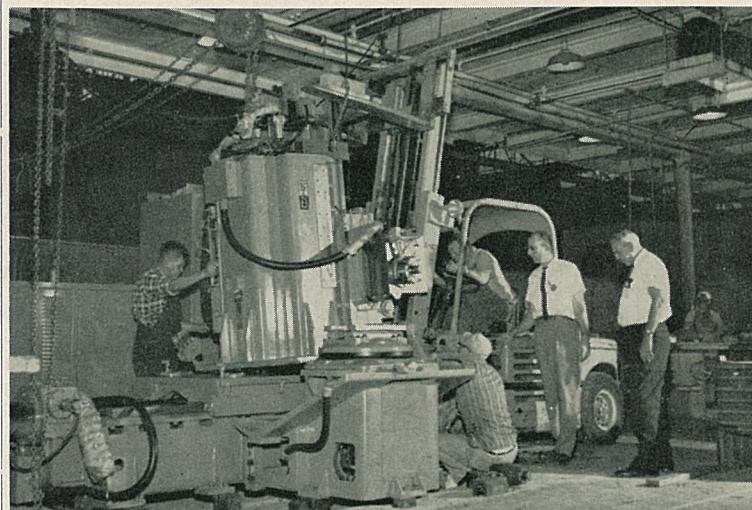
Rate of tool travel is programmed at speeds which are continuously variable from zero to 45 inches per minute. Sixteen spindle speeds from 20 to 3,600 rpm can be selected manually.

A variety of tools can be fitted to the standard milling tool holder.

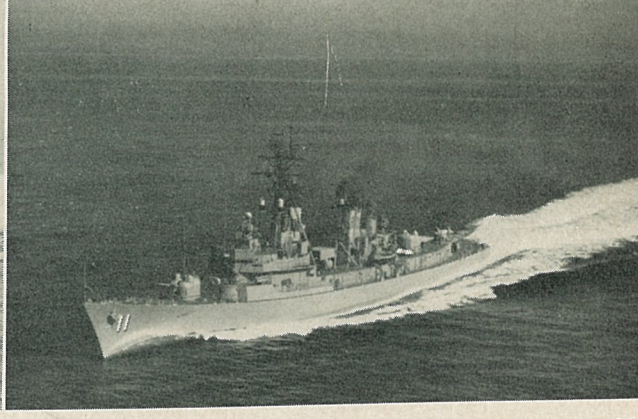
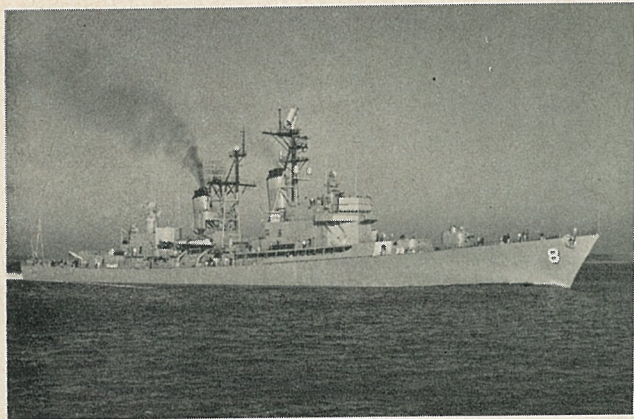
The new device is in use in GD/Astronautics machine shop (Dept. 731) headed by W. T. Herchold, general foreman. R. F. Stygar operates the machine during first shift, and second shift operation is scheduled for the near future.

Upon its receipt and installation, the machine was "validated" (tested for conformance to specifications) by E. G. Hartdorn and F. L. Unmack of applied manufacturing research (Dept. 290-2).

Don Berkstrom and James Malis, GD/Electronics product service engineers (Dept. 320), took leading roles in placing the controller in service.



INTO PLACE—Carefully positioning new numerically-controlled milling machine in GD/Convair Bldg. 1, Plant 1, is crew from plant engineering (from left) Kenneth Morgan; Bill Hoyt (kneeling); William Gillikin, controlling lift; B. E. Ahring, Dept. 25-5 assistant foreman; and (at far right) Jack Condit, facilities equipment engineer.



NEW MISSILE SHIPS—Navy gained four new Advanced Terrier and Tartar armed ships in recent weeks. Three, USS William V. Pratt (DLG-13), center; USS Macdonough (DLG-8), left, and USS Sellers (DDG-11) are shown here. Fourth is USS

Constellation (CVA-64), a Forrestal Class aircraft carrier. Sellers is armed with Tartar, others with Advanced Terrier. There are now 26 Terrier, Advanced Terrier, Tartar armed ships in U. S. Navy.—Official U. S. Navy photos.

Navy's Terrier, Tartar Ships Increase to 26

The U. S. Navy's fleet of Terrier, Advanced Terrier and Tartar armed ships has grown to a total of 26 with commissioning of an aircraft carrier, two destroyer leaders and a destroyer in recent weeks.

All three missiles are designed primarily for air defense, and are built for the Navy's Bureau of Naval Weapons by General Dynamics/Pomona.

The USS William V. Pratt (DLG-13) was commissioned Nov. 4 at Philadelphia Naval Shipyard, and the USS Macdonough (DLG-8) was commissioned the same day at Boston Naval Shipyard. The Pratt was built by the Philadelphia Naval Shipyard, and the Macdonough was built by Bethlehem Steel Company at Quincy, Mass.

The USS Constellation (CVA-64) was built by the New York Naval Shipyard and was commissioned there Oct. 27 (General Dynamics NEWS, Nov. 8).

The USS Sellers (DDG-11) was built by Bath Iron Works, Bath, Me., and was commissioned Oct. 28 at Boston Naval Shipyard.

The Pratt, Macdonough and Constellation are all armed with the Advanced Terrier missile, while the Sellers is armed with the Tartar.

The two destroyer leaders, Pratt and Macdonough, are approximately 512 feet long, 52 feet wide, and have a displacement of 5,600 tons. Their engines are rated at 85,000 horsepower, and they have a top speed of over 30 knots. Both ships have complements of approximately 22 officers and 335 enlisted men.

The Sellers, a destroyer, is 431 feet long, has a beam of approximately 47 feet, and a displacement of 3,370 tons.

With the addition of these ships the Navy now has two aircraft carriers, two heavy cruisers, a nuclear cruiser, three light cruisers, 10 destroyer leaders and eight destroyers armed with General Dynamics/Pomona built missiles.

Key Personnel For American Trained in 990

Top American Airlines flight and training superintendents and managers from all over the network this week completed a three-week 990 ground school flight training course taught by their own instructors at General Dynamics/Convair.

W. W. Braznell, American's assistant vice president of flight from New York, headed the group of 18 key personnel and 10 flight engineer and pilot instructors who arrived at the San Diego plant the first of this month. He was accompanied by T. F. Copeland, director of flight training, New York.

Classes, conducted with assistance of GD/Convair production flight instructors, were coordinated by R. L. Bisbee, superintendent ground school programs for American. All AA instructors had received initial ground school training in GD/Convair courses earlier this year.

Next American Airlines classes on the 990 will start this month in New York City.

Other American Airlines courses now in progress at GD/Convair are four maintenance groups in the customer service training area. Beginning Nov. 13 was the third American Airlines Management Orientation course, and classes in engine run-up, power plant, airframe systems. GD/Convair customer service instructors will assist.

All American Airlines groups are receiving cockpit procedures trainer familiarization while at the San Diego plant.

GD/Electronics SD Operations Consolidated

Consolidation of two General Dynamics/Electronics operations in San Diego has been announced by C. F. Horne, president of GD/E and General Dynamics/Pomona, as part of a planned program to streamline the corporation's electronics organization.



C. F. Horne

The new unit, consisting of the former Information Technology and Military Products-San Diego facilities will be named General Dynamics/Electronics-San Diego. William Lawrence, formerly general manager of Military Products in San Diego, has been named general manager for the new organization.



Wm. Lawrence

General Dynamics/Electronics-San Diego will continue to develop and market its line of airborne and surface radar equipment and related products, computer and communications film recorders, paper printers and display systems, and CHARACTRON[®] Shaped Beam Tubes.

Lawrence's staff in the new operating division will include: L. H. Orpin, manager of Information Technology Group; H. L. Gates, manager of operations; H. C. Howe, manager of industrial relations; P. B. Johnson, manager of communication; J. A. Moore, legal counsel; W. R. Rauth, manager of customer requirements; R. C. Smith, controller; W. S. Stroud, REINS program manager; J. P. Syren, manager of contracts; Dr. D. Wahl, manager of engineering; and E. S. Winlund, manager of reliability and quality control.

Employment for the new division will total more than 1,200. The combined division will continue to occupy its facilities at Convair Plant #1 and 1895 Hancock Street, San Diego.

Lawrence, an engineering graduate of Pennsylvania State University, was formerly director of operations for GD/E's Rochester Division. Prior to that he held positions as assistant general manager of Bell Aircraft Corporation's divisions in Buffalo and Rochester, New York; manager of manufacturing at Radio Condenser Corp., in Camden, N. J.; manager of operations at Magnavox Corp., in Greenville, Tenn., and plant manager of General Electric Co., in Syracuse, N. Y. Lawrence is a licensed professional engineer in New Jersey and Pennsylvania.

Class in Verifax Operations Slated

A special class in operation of Verifax machines for office employees of GD/Astro has been announced by educational services (Dept. 130-3).

GD/Astro Son Wows 'em as Robot In \$3 Costume Designed by Dad

Not "life-like" but realistic was the Halloween costume designed last month by Don Ingram of GD/Astro's applied manufacturing research (Dept. 290-2) for his son, Bruce, 8.

The costume, which turned Bruce into a walking, grasping, flashing and "beeping" robot, was the hit of the neighborhood, and won prizes at his school carnival for the "most unusual" outfit.

Radio tubes topped the robot's head, and served as "eyes." Lights blinked on shoulders and face and a chest speaker buzzed out "code" signals. Metal "pinchers" replaced hands.

"It's something I'd wanted to make for a long time," Ingram said.

The basic structure was fash-

ioned from cardboard tubes of various sizes, and areas around joints were made of accordion-pleated aluminized cloth.

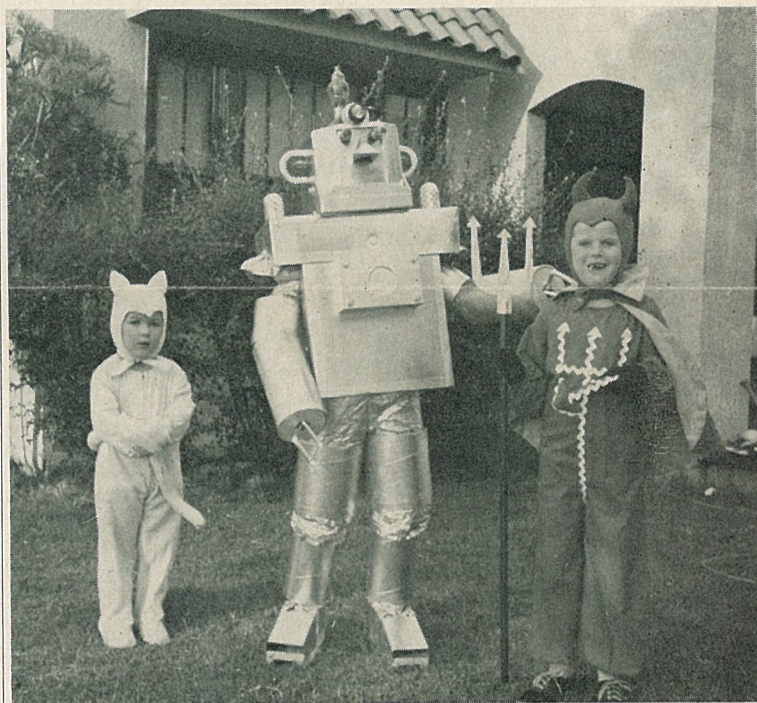
"I spent about 40 hours at night over a three-week period," his father explained. "Most of the materials were odds and ends."

The whole project cost about \$3.

"We had only two problems," Ingram added. "First, Bruce weighs only 85 pounds and the 25-pound costume became quite a burden."

"Then, because Bruce looked out of the costume through the robot's mouth, this put the nose at the right level for a lock of his hair to pop out occasionally."

"It's a shock to see a robot sprout a mustache!"



"MONSTER"—Bruce Ingram, 8, models robot costume built by father, Don Ingram, GD/Astro Dept. 290-2, while sister, Deborah, right, adopts "devil-may-care" pose. "Cat" at left is playmate.

Mechanization of Material, Cost Control Scheduled

Planned mechanization of General Dynamics/Astronautics material and cost control systems scheduled during the coming year has resulted in new appointments within material operations (Dept. 830).

Key shift in the realignment announced recently by R. E. Poling, manager of material operations, is assignment of R. R. Tompkins, chief of material control, to head a special team responsible for installation of the improved system.

During the period of Tompkins' special assignment, all material control functions will be under direction of T. E. Becht, general supervisor.

Additional department appointments in recent weeks include that of F. J. Parker, chief of stores and traffic, and L. H. Allen, chief of procurement planning.

The improved material and cost control system will involve reorganization of methods relative to material identification, stores, accountable records, vendor evaluation, open commitment control, and material release.

At the heart of the system is the new IBM 7070 computer recently acquired by GD/Astro for business applications.

"These system refinements are expected to advance GD/Astro's competitive position in the aerospace field by increasing efficiency in applicable material operations," Poling explained.

Ray Quinn Appointed Material Cost Mgr.

Appointment of Raymond H. Quinn as manager of material cost (Dept. 840) was announced this week by F. J. Traversi, General Dynamics/Astronautics director of material.



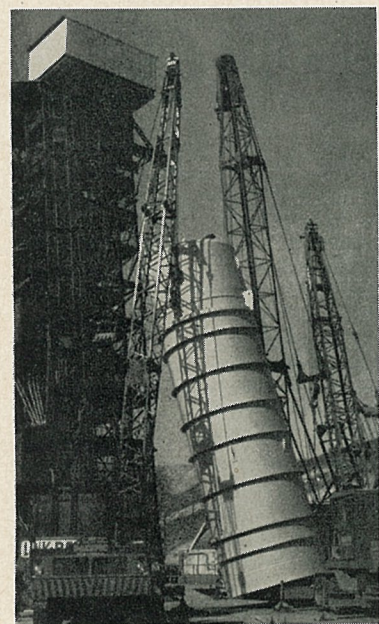
R. H. Quinn

Quinn joined GD/Astronautics earlier this year as chief of material price analysis, and was previously manager of budgets and reports for Gillette Safety Razor Co., Boston.

Storage Tank Sunk in Silo

Latest addition to GD/Astronautics' Sycamore Canyon facility will probably never be seen by most employees assigned there.

It is a liquid oxygen storage tank now suspended underground in a 50-foot-deep "silo" at Site 1. The tank, which hangs on four steel turnbuckles in its 18-ft.-diameter hole, will provide liquid oxygen storage in support of Atlas ICBM tests at the stand.



TEAM WORK—Three massive mobile cranes work together during placement of 120,000-lb. liquid oxygen tank in 50-foot "silo" at Sycamore Canyon facility.

Dynamics Receives Air Safety Award

General Dynamics Corporation received an Air Defense Command safety award this month for support of the ADC Life Saver Ground Safety program.

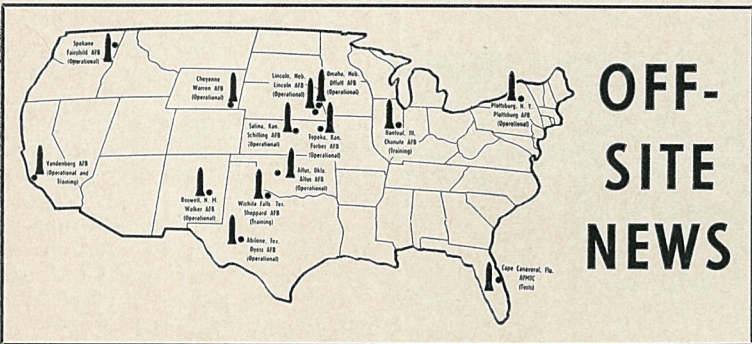
The award was accepted by J. H. Famme, GD/Convair vice president and general manager, from Lt. Gen. R. H. Terrill, USAF, vice commander of ADC, at ceremonies in Colorado Springs, Colo.

General Dynamics is one of the companies supporting and participating in Air Defense Command ground safety campaigns conducted at ADC installations.



PASTORAL PLATTSBURGH—Nature's beauty abounds at GD/Astro off-site location, Plattsburgh AFB, where Astro personnel (top center) emerge from colonial-style main office building for lunch. Within 200 yards of downtown Plattsburgh, Astro's C. R. Andrew shows Ken Emery (top left) Saranac River, duck hunter's paradise. Astro's Terry O'Donnell and Joan Duso (top right) say goodbye to "Grand Isle," one of ferry boats which ply 136-mile-long Plattsburgh neighbor,

Lake Champlain. Fort Montgomery (bottom center and right) earned title "Ft. Blunder" when American soldiers built this early stronghold only to find it stood on Canadian soil. A historical landmark, "Blunder" is now in New York, just four miles from Atlas launch site. Plattsburgh is only minutes from international border, lower left. On-site GD/Astro contingent have choice of winter sports—fishing through ice, skiing, ice skating, ice boating.



- GENERAL DYNAMICS NEWS CONTACTS**
- AFMTC—P. C. Brown, ext. 3-4741.
 - ALTUS—John Lockwood, ext. 7141.
 - DYESS—G. D. Higgins III, ext. 8370.
 - EDWARDS RS—Chris Marques, ext. 27.
 - FAIRCHILD—C. C. Clickner, ext. 5596.
 - FORBES—Jane Cordner, ext. 4514.
 - LINCOLN—Maxine Utley, ext. 412.
 - PLATTSBURGH—Kenneth Emery, ext. 6242, 6243.
 - SCHILLING—D. J. Rahlfs, ext. 8745.
 - SHEPPARD—Steve Delbridge, ext. 8243.
 - VANDENBERG—Lucy Signorelli, ext. 8-5046.
 - WALKER—Rod Bricker, ext. 603.
 - WARREN—Alice Watters, ext. 73-716.

Facility Construction Near Seward Completed, Equipment in Checkout

LINCOLN AFB—Ceremonies near Seward, Neb., recently marked completion of facility construction for all Lincoln AFB Atlas missile launch sites. Which means that all silo units are now involved in installation and checkout of equipment, a task in which GD/Astronautics personnel here play the major role. During the special observance, mention was made of the extensive task involved in completing the site near Seward. The

silo there was sunk through thick layers of soft, wet clay and sand, necessitating the use of dozens of high capacity pumps in disposing of water and soils seeping into the hole. One unique feature of this silo alone is a heavy steel piling extending 25 feet below the silo base with upper ends embedded in concrete walls of the silo. Attending the special ceremony were dignitaries of the local area, Air Force leaders and contractor personnel.



LINCOLN GUEST—Recent visitor to Atlas launch facilities at Lincoln AFB was Maj. Alexander P. de Seversky, author and air pioneer. He is shown boarding helicopter for flight to site with Col. E. P. Denton, 551st SMS commander, and Col. T. G. Corbin, commander, 818th Air Division.

GD/Astro's Population At Plattsburgh Is 400

PLATTSBURGH AFB—Facility construction on the only operational Atlas launch sites east of the Mississippi River is progressing steadily toward completion at this upstate New York base. To handle tasks associated with installing and checking out launch and service facilities which follow, General Dynamics/Astronautics is engaged in a buildup of on-site work forces now totaling almost 400. W. H. Dunn heads the local effort as operations manager, reporting to E. J. Huntsman, base activation manager for "E" and "F" bases. R. C. Smith, now a launch complex supervisor, was the first GD/Astro man permanently assigned here. Following shortly were men to fill site surveillance teams who worked through late summer and winter months last year and remain on duty. In addition, a buildup of support forces has been in progress since early this year with continued growth in prospect into 1962. Just 26 miles from Canada, Plattsburgh AFB is ringed by metropolitan Plattsburgh, a city of over 20,000. In area it is the fifth largest Air Force base in the world. Some structures on the base date back to pre-1900. Much of the base was built in the past 10 years, however. Strategic Air Command units fly B-47 bombers and KC-97 tankers from here. Atlas launch complexes are located at distances from 26 to 52 miles away in both New York and Vermont, near towns with names like Chazy Lake, Mooers Forks, Bouquet, Sugarbush, etc. Some sites are within a few miles of Canada. Plattsburgh is on the shores of 136-mile-long Lake Champlain, snug between the Green Mountains of Vermont and the Adirondacks. The terrain has a moderating effect on weather, affording Plattsburgh a milder climate than is normally associated with northern regions. Average mean temperatures range from 56.6 maximum to 36.1 minimum. Rainfall averages 30.7 inches and snowfall, 57.1 inches. Elevation is 174 feet. "Astronautics families have found it easy to adapt to the climate and to enjoy one of the most beautiful areas found anywhere," Dunn said. "Some form of recreation is available year round." Winter will see skiing, ice skating, ice boating. Unusual to some

Astro folk will be fishing through holes chopped in Lake Champlain. Hunting seasons include deer, bear, pheasant, duck and small game. Fishing in both lakes and streams can be pursued all year. Touring and sightseeing to such points as Burlington, Vt., just across the lake, Montreal (64 miles), Albany (167 miles), Boston (252 miles), and New York City (316 miles) attract Astro people. Plattsburgh has one unique feature among silo bases for the coming winter—a crown. This consists of a type of house to be erected over silo entrances allowing operation of silo doors, etc., while retaining heat from the silo itself. In fact, just about all of chores involved in silo activation will be indoors. Key posts on Dunn's staff here are filled by: M. S. Bickers, chief of operation support; Hal Boyett, assistant to the manager; P. B. Locke, contracts administration; G. N. Mobley, communication administrator; C. H. Fontaine, chief of production control; J. V. Hennigan, chief of material; C. O. Hill, chief of site operations; R. Sanchez, chief of inspection; J. N. Mattson, chief of industrial relations; J. A. Parker, chief of cost control; H. L. Sterling, chief of launch group "A"; W. M. Hasard, chief of launch group "B"; and W. D. Taylor, chief of launch group "C."

'History Buffs' Have Field Day

PLATTSBURGH AFB—Atlas missile launching facilities being installed here form another link in a chain of defense installations that have dotted this general area for more than 200 years. History "buffs" among GD/Astro personnel have had a field day studying and actually visiting these locations. Some are ruins or areas noted by markers, while some have been fully restored as historical attractions. Indian tribes from what is now Canada and the United States battled around Lake Champlain. Samuel de Champlain, a Frenchman, first visited the lake in 1609. He was followed by others who found the 136-mile-long lake a natural route to move arms and warriors north and south. Both French and English settlers erected forts up and down the lake. These changed hands with the tides of battle. Later the new American colonies got into the act, winning and losing these forts. Names like de Champlain, Ethan Allen, Benedict Arnold, Roger's Rangers, etc., made history here. In 1776 the first naval battle of the Revolutionary War took place with Arnold's forces thwarting British attempts to drive a wedge between the struggling colonies. Then in 1814 the last naval battle between England and the United States occurred.

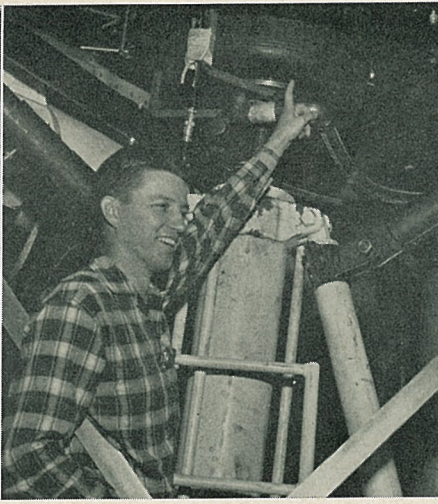
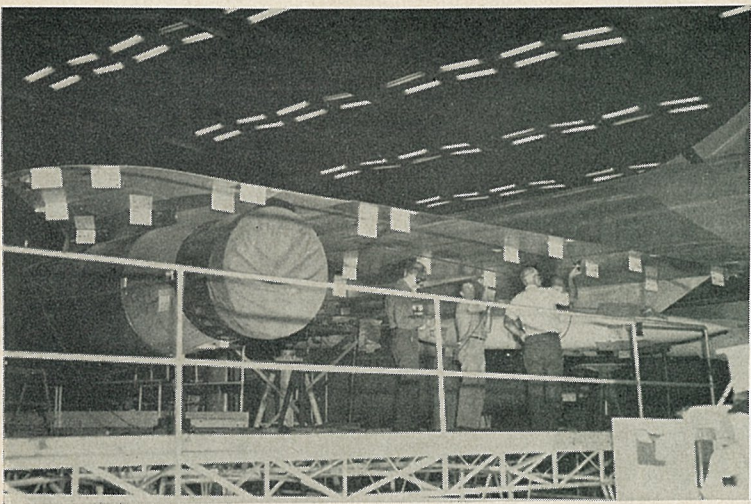
Air Force Civilians Collect \$500 Each For Record Atlas Program Suggestion

FAIRCHILD AFB—Two civilian Air Force employees involved in the Atlas program here have been awarded \$500 each for a Beneficial Suggestion concerning Atlas. The awards represent the largest amount ever paid to an Air Force employee at this base. Jack Hughes of the San Bernardino Air Materiel Area Detachment and Carmen C. LaPorte of the Contract Support

Detachment received the awards. They suggested jointly an intermediate method of safe cleaning liquid oxygen and liquid nitrogen trailers used in the program here. Their idea reduced a job normally requiring 2,000 manhours to 42 manhours per trailer. Both Hughes and LaPorte have worked here for approximately two years. Col. Thomas S. Jeffrey, SATAF commander, made presentations.



CASH AWARDS—Col. T. S. Jeffrey, SATAF commander at Fairchild AFB, center, recently awarded \$500 each to Jack Hughes and Carmen C. LaPorte, Air Force civilian employees, for Beneficial Suggestion dealing with Atlas base activation.



"FLOATER"—In center GD/FW project structures engineer A. C. Murphy points to air-filled tire on wing jack used to suspend Hustler No. 42 in vibration test. Vibra-

tions were checked constantly at eight stationary points (left) in addition to roving checks. At right vibrations are fed into machine and data recorded in foreground.

Value Control Programs Gain With Over 1,000 Indoctrinated

Over 1,000 General Dynamics men have been indoctrinated in value control principles since the program, aimed at better quality for less cost, was initiated.

Pioneering the movement was GD/Pomona three years ago. Since the program was made plant-wide in late 1959, over 600 have been trained in application of value control techniques. The 15th seminar there was concluded last month with net savings since January, 1960, from projects completed at near \$2 million.

Materials Expert Authors New Book

Dr. R. F. Rolsten, GD/Convair materials research expert, is the author of a recently-published book dealing with new materials processes entitled "Iodide Metals and Metal Iodides."

Rolsten joined GD/Convair last year. He spent ten years in research at E. I. du Pont de Nemours, Battelle Memorial Institute and Ohio State University where he received his Ph.D.

880-M Performance Perfect in October

Alaska Airlines' Convair 880-M jetliner recorded a 100 per cent performance during its second full month of operation. R. W. Gilbert, the airline's executive vice president, reported.

During the month of October the "Golden Nugget Jet" operated every one of its scheduled 31 round-trip flights between Seattle and Alaska. The jetliner was flown to Seattle after its delivery at the San Diego plant the end of July.

By the end of this year, all executives at GD/Pomona will have attended orientation sessions. Heading Pomona's organization is Ed Heller, who as value control coordinator, is responsible for the program's application in all major departments.

Close on the heels of GD/Pomona were Astronautics and Fort Worth Divisions. At Fort Worth, 400 graduated from 10 seminars during the program's first year. Bill McMurry of educational services has been in charge of coordination. However, this fall B. G. Reed, vice president-operations, was named to head a value control review board for correlation of all value control efforts.

Astronautics is conducting its 16th value control seminar. Sessions have been scheduled consecutively since the program was formally inaugurated a year ago. Up to this point, 220 have been trained. Everett Lindem, educational services coordinator, reported.

At GD/Convair, almost 100 supervisors attended a familiarization course in May, 1960, under educational services arrangements.

Stress on value control has been pointed up with recent appointment of H. P. Williams as value control manager. First seminar in the new program opens next Monday (Nov. 27) for 40 men chosen from departments throughout the division.

An executive seminar was held early this month at San Diego under auspices of E. Warren Feddersen, General Dynamics director of manufacturing engineering. Heller conducted the sessions.

47 Jet 880s Flying Over Airline Routes

Convair 880s in passenger service—47 are now flying over domestic and foreign routes—had piled up a total of 75,870 hours flying time by the end of October.

Time was counted from May, 1960, when the first 880 went into service with Delta Air Lines. Now carrying passengers are 11 with Delta; 20, TWA; 6, Northeast Airlines; 880-Ms are with Alaska Airlines, 1; Swissair, 2; Japan Air Lines, 3; Viasa of Venezuela, 2; Civil Air Transport, Formosa, 1; Federal Aviation Agency, 1.

B-58 'Suspended in Air' For Flutter Testing Of Multi-Weapon Shape

General Dynamics/Fort Worth engineers recently ran what may be the first ground-vibration tests ever conducted in this country on a big bomber "suspended in air."

Tests measured flutter conditions on a B-58 modified to multiple-weapon configuration. Results will be combined with aerodynamic and damping forces in a complete flutter analysis.

Vibration tests are routinely run on planes while they are being supported by their landing gear.

But the big Hustler—thanks to the ingenuity of GD/FW engineers—assumed an "in-flight" posture by resting on four regular B-58 tires.

The four air-filled tires lay horizontally on air springs atop four airplane wing jacks, located on either landing gear and forward jack points. Pressurized air from four adjoining tanks permitted air to leave and re-enter each tire as the B-58 moved because of various vibrations fed into the plane.

"Since we had No. 42 literally floating on air, we attained a free-free state, wherein no external restraint was exerted," said A. C. Murphy, project structures engineer. "It's as if the plane were actually suspended in space."

Vibrations from one-half to 15 cycles per second were fed into the plane in a number of program combinations. These were induced through eight electromagnetic shakers, four of which are placed on outboard nacelles, two on inboard nacelles, one on the nose and one on the plane's tail section.

Vibration was measured by accelerometers. In addition, engineers used roving accelerometers to make periodic checks over the airplane.

"Individual measurements were, of course, always analyzed in relation to measurements made at other points," Murphy pointed out.

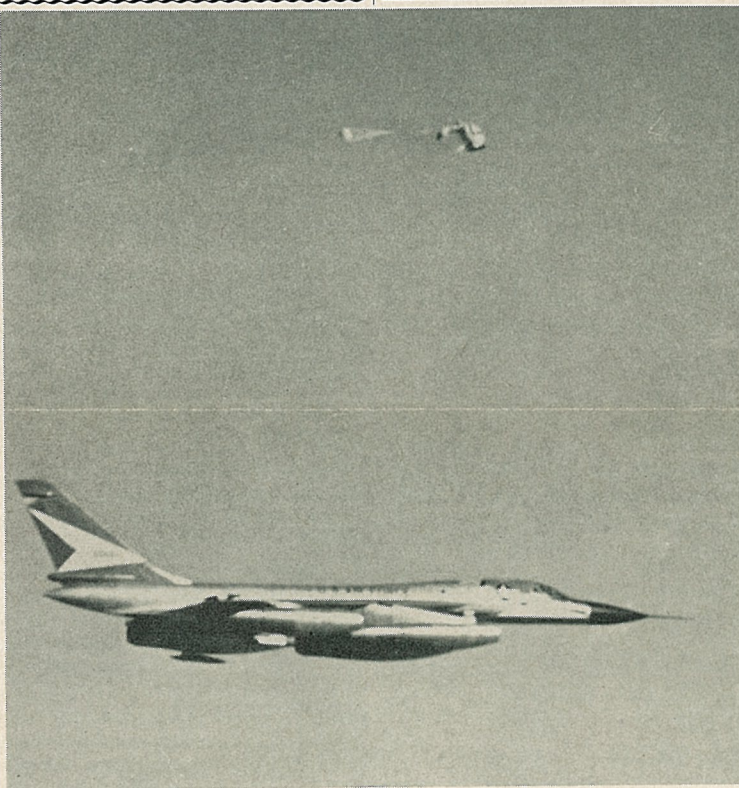
Murphy said the method used to "float" No. 42 is believed to be unique in this country, although the English have conducted similar tests.

The Hustler weighed in at about 150,000 pounds.

Primary purpose was to prove that the modified Hustler—like all other models—is flutter-free.

ASTRO SAFETY CHIEF GETS COUNCIL POST

J. W. Garrison, General Dynamics / Astronautics chief of safety, has been elected to head the membership committee of the Aerospace Section Executive Committee, National Safety Council.



UP AND AWAY—Second successful in-flight ejection of escape capsule from B-58 was carried out last week at Edwards AFB. Small stabilizing chute opens as capsule is ejected about 250 feet above speeding Hustler. Capsule dropped 5,000 feet before main chute opened, floating capsule to earth.

Four Flight Crews Kept Busy As Jet 990 Crisscrosses U.S.

Four flight crews are keeping a Convair 990 flying day and night, practically around the clock, in the last phase of the test program which will culminate in a Federal Aviation Agency revenue ticket.

Plane No. 6 is flying back and forth across the country in functional and reliability checkouts. In two days last week it made three round trips to Miami, Fla. First flight in F&R left San Diego at 7:22 a.m. the morning of Nov. 13, arrived in Miami in exactly four hours. Returning, the plane touched down at Houston; and at Fort Worth, Tampa, and Phoenix on other flights.

Although basic routes will take the plane cross-country to Florida and back throughout F&R flights, side trips will be made to Baltimore and New York. Testing the plane over flights of various lengths, simulating actual airline operations, crews make hops of 350 miles, 1,200 miles, and over.

Crew captains alternating on the flights are W. D. Carrier, W. B. Harwell, A. P. Wilson, and John Knebel. Passengers include FAA inspectors, American Airlines, General Electric Co., and

General Dynamics/Convair representatives.

Flights will continue into December with final certification scheduled before the end of the year.

In other FAA certification testing, checkouts have been completed on the Bendix autopilot installed on 880-Ms going to FAA, Alaska Airlines, and Swissair.



BRIEFING—GD/Pomona's Ed Heller, value control expert, this month conducted special value seminars for selected groups in Bldg. 19 at San Diego.

GD/Astro Scholars Graduated With Distinction by SD State

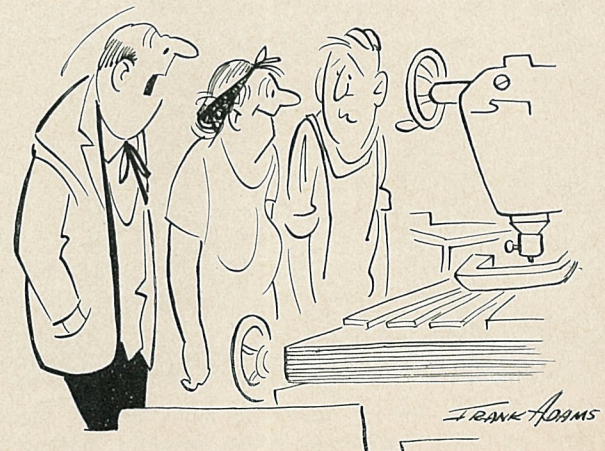
Seven recent San Diego State College graduates, all attending on GD/Astronautics scholarships, achieved major academic recognition during undergraduate careers.

James L. Crock, who graduated with highest honors and distinction in accounting in June, has received the Elijah Watt Sells Award for an outstanding score in the Uniform Certified Accountant Examination. He was among 12 singled out for the award from

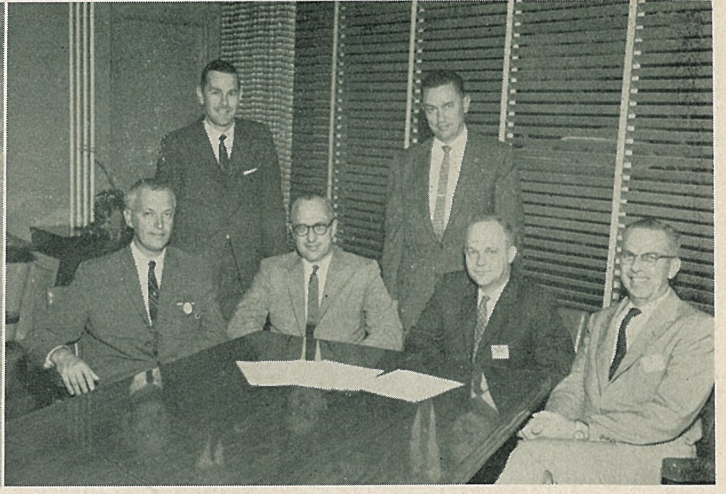
over 11,500 candidates.

Other scholars honored upon graduation were Edwin W. Barrett, honors and distinction in accounting; Larry C. Brown, honors and distinction in chemistry; and Alfred B. Hughes, high honors and distinction in physics.

Also, John McBride, distinction in engineering; James L. Shores, honors and distinction in mathematics; and Louis G. Tramonti, high honors and distinction in engineering.



"Can you put Mrs. Brown on a machine that will give her something to think about while she talks?"



C-141 TEAM—At left, part of engineering group at GD/Convair beginning design of C-141 empennage under recently-awarded subcontract. Center is artist's conception of C-141 cargo jet transport to be built for Air Force with Lockheed-Georgia Co. as prime contractor. Among those heading effort at San Diego are (far right), seated from left, D. H. Koozer, Lockheed C-141 engineering representa-

tive; John Bergstrom, GD/Convair assistant chief engineer; N. F. Hill, Lockheed material administrator for C-141 subcontracts; W. W. Beal, Lockheed purchasing representative; (standing) D. R. Stewart, GD/Convair contract administrator for C-141; and James M. Adamson, C-141 project manager. Initial contract calls for six tail sections with 1963 delivery.

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SAN DIEGO EDITION

NEWS

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Wednesday, November 22, 1961

GD/Electronics SD Operations Consolidated

Consolidation of two General Dynamics/Electronics operations in San Diego has been announced by C. F. Horne, president of GD/E and General Dynamics/Pomona, as part of a planned program to streamline the corporation's electronics organization.



C. F. Horne

The new unit, consisting of the former Information Technology and Military Products-San Diego facilities will be named General Dynamics/Electronics-San Diego. William Lawrence, formerly general manager of Military Products in San Diego, has been named general manager for the new organization.

General Dynamics/Electronics-San Diego will continue to develop and market its line of airborne and surface radar equipment and related products, computer and communications film recorders, paper printers and display systems, and CHARACTRON[®] Shaped Beam Tubes.

Lawrence's staff in the new operating division will include: L. H. Orpin, manager of Information Technology Group; H. L. Gates, manager of operations; H. C. Howe, manager of industrial relations; P. B. Johnson, manager of communication; J. A. Moore, legal counsel; W. R. Rauth, manager of customer requirements; R. C. Smith, controller; W. S. Stroud, REINS program manager; J. P. Syren, manager of contracts; Dr. D. Wahl, manager of engineering; and E. S. Winlund, manager of reliability and quality control.

Employment for the new division will total more than 1,200. The combined division will continue to occupy its facilities at Convair Plant #1 and 1895 Hancock Street, San Diego.

Lawrence, an engineering graduate of Pennsylvania State University, was formerly director of operations for GD/E's Rochester Division. Prior to that he held positions as assistant general manager of Bell Aircraft

(Continued on Page 2)



CLEAN HOUSE — Joe Famme, GD/Convair general manager, kicks off conservation and housekeeping drive, as he checks files with secretary, Carol Ulrey.

Drastic Housecleaning Slated For December

December will be housecleaning month at General Dynamics/Convair.

J. H. Famme, GD/Convair vice president and general manager, has designated it "Year-End Conservation Month," and urges every department in the division to check thoroughly on equipment and space to be certain it is used to best advantage.

In other words, give the plant a good housecleaning.

"Success in meeting business competition successfully demands that we employ every available resource of the division with utmost efficiency," said Famme in a division notice which went last week to all supervision.

"Conservation and maximum utilization of space, material, equipment, and supplies are basic elements in the accomplishment of this objective."

Throughout the month of December everyone is asked to identify salvagable material, supplies, equipment, tools, and other items no longer needed; clean out files; discard obsolete material and papers such as correspondence, extra copies of old brochures, etc.

All excess office furniture and equipment should be returned to surplus office equipment area, Bldg. 10, Plant 1, ext. 2268; perishable tools no longer needed to control stations; obsolete draw-

ings and other unused materials to storage or salvage.

Said C. H. Hahn, cost reduction supervisor, analysts will work with Workman's Safety Committees during latter half of the month to monitor the program. Check lists will be provided to aid inspection.

J. J. Ireland, chief of systems and procedures, in charge of the campaign's organization, explained, "The Year-End Conservation program should go far toward solving problems of space and effective equipment utilization. Space is a commodity which we must sell, not waste by inefficient use."

Hand in hand with the housecleaning campaign is a drive to eliminate safety hazards—checking heating, lighting, extension cords; safely storing flammable materials; cleaning equipment and machinery.

Special calendars of the month have been circulated throughout the plant as reminder of things to do.

Salvage Sales Schedule Listed

Salvage yard schedule for employee sales at General Dynamics/Convair and General Dynamics/Astronautics sites for the next four-week period:

GD/Convair—Nov. 25 and Dec. 9.

GD/Astro—Dec. 2 and 16.

Project System Adopted as C-141 Work Under Way

Team effort will keynote General Dynamics/Convair activities during work on its portion of the C-141 cargo jet transport for the Air Force.

The entire program, under which GD/Convair will build C-141 tail sections for Lockheed-Georgia Co., prime contractor, is being set up on a functional project system, explained James M. Adamson, project manager.

Every function involved throughout the entire plant is represented in the C-141 project organization rounding into shape this month.

J. H. Famme, GD/Convair vice president and general manager, pointed out that the project team system will streamline activities as the C-141 program progresses from design to production.

"We feel that this arrangement of pulling key men from all departments into a closely-knit team to push through one particular program will facilitate all efforts," he continued. "GD/Convair feels that it will prove the most effective and efficient system for this project."

"I know that everyone throughout the company will give the C-141 organization the fullest support and cooperation."

Named to the C-141 project are:

Contracts, D. R. Stewart, contract administrator; engineering,

R. W. Miller, project engineer; planning, E. H. Cooke, program analyst; logistics, C. B. Robinson, service parts supervisor; operations planning, Terry Kell, industrial engineer; manufacturing project planning; production, N. P. Pearson, superintendent.

Manufacturing control, M. L. Sweeney, manufacturing control general supervisor; tooling, O. L. (Continued on Page 2)

REAL/Varig Reps Gather At GD/Convair

Engineering, training, and line people from throughout the system of REAL/Varig Airlines are at General Dynamics/Convair for their first maintenance course on the Convair 990.

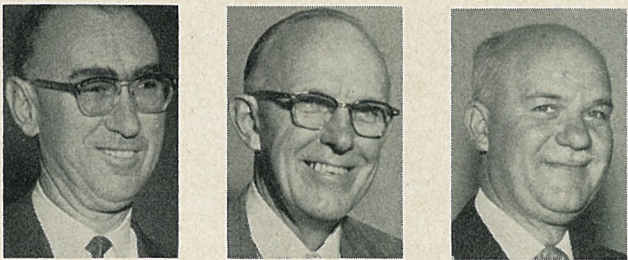
Twenty-five representatives from such points as Porto Alegre, Rio de Janeiro, Bogota, Caracas, Mexico City, Miami and Los Angeles, arrived at the San Diego plant early this month for the customer service training. The course began Nov. 6 and will extend to Dec. 15. It covers power plant installation, aircraft systems, electronics, electrical, air systems, instrument familiarization, cockpit procedures trainer.

Conducting the sessions are (Continued on Page 2)



BRAZILIAN "STUDENTS"—Snapped beside first Convair 990 going to Brazilian airline, REAL/Varig, are first group of men at GD/Convair for customer service maintenance course.

Log Book Entries



MORE VETERANS—Latest to join the ranks of 25-year veterans at General Dynamics/Convair are, from left, B. T. McMicken, Dept. 137; W. J. Enlund, Dept. 148; F. E. Grossher, Dept. 2-2.

Service Emblems

CONVAIR

Service emblems due during the period Nov. 16 through Nov. 30.
Twenty-five-year: Dept. 6-300, B. F. Ferguson; Dept. 31, R. W. Huckell; Dept. 145, E. G. Denniston; Dept. 401-0, Frank Mische.
Twenty-year: Dept. 1-22, R. R. Brewton; Dept. 6, R. D. Chesler, R. L. Runnalls; Dept. 16-9, J. E. McCann; Dept. 31, Harry Jourdan, R. J. Larson; Dept. 48-21, G. D. Hansen; Dept. 91-7, L. H. Olson, G. B. Steed.
Dept. 100-5, C. B. Davis; Dept. 101, W. L. Dueber; Dept. 135, G. L. Darr; Dept. 139, J. C. Rodriguez; Dept. 141, A. D. Driver; Dept. 146, J. E. Baldrige; Dept. 160, M. J. McCormick; Dept. 171, W. A. Brinkley; Dept. 206, B. T. Robinson; Dept. 215, V. H. Logan, H. A. Ostine; Dept. 292-1, J. F. L'Etourneau; Dept. 400-1, M. C. Reid; Dept. 401-1, R. D. Arave.
Fifteen-year: Dept. 6-01, W. H. Wilson; Dept. 14-8, A. E. Brandt; Dept. 15-5, Kenneth Snyder; Dept. 16-4, R. L. Plummer; Dept. 21-1, Joe Quince Jr.; Dept. 31, R. D. Johnson, A. E. Ko, L. E. Worden.
Dept. 133, E. E. Tayler; Dept. 144, R. C. Myatt Jr.; Dept. 146, C. P. Check; Dept. 192, L. E. Kampe, E. P. Lawson; Dept. 223-0, F. E. Hitchcock; Dept. 292-1, C. L. Swope; Dept. 400-2, R. W. Kincaid; Dept. 401, O. W. Becker, R. G. Metz.
Ten-year: Dept. 1-14, Gena R. Millspaugh; Dept. 3, C. U. Blanchard, E. E. Vikander, Sarah A. Williamson; Dept. 4-0, P. W. Bethea; Dept. 6, Hazel L. Doughty, D. E. Hays, A. V. Iannucci, R. C. Stettler.
Dept. 14, Margaret L. Maving, A. M. Perkins; Dept. 15, Lillian M. Barboza, A. L. Schaus, E. J. Tyndale Jr.; Dept. 16-7, Faye H. Killough; Dept. 21, R. A. Mendoza, J. L. Raney, H. B. Stevens; Dept. 25-1, J. A. Fortier, R. C. Shourds, Alf Tollefson; Dept. 31, C. L. Ayala, J. B. Flores, L. J. Lovell, K. L. Pauley, Peter Whisler.
Dept. 44-5, Mildred M. Sabin; Dept. 45-1, M. J. Mattel; Dept. 48, Marie M. Addison, Nicholas Strozza, Neil P. Woodward; Dept. 100-5, G. C. Thiersch; Dept. 101, Joseph Almeida; Dept. 116, Virginia B. Maving.
Dept. 120, Mary S. Rowley; Dept. 129, Ruth J. Hall; Dept. 133, C. F. Giamanco; Dept. 134, J. J. Lewis; Dept. 135, H. L. Brand, L. L. Geersma, J. R. Reynolds; Dept. 139, Arthur Mayne Jr.; Dept. 142, N. R. Castillo, Bonnie E. South, Marjorie D. Stava; Dept. 143, M. L. Kerns; Dept. 145, Allen Halley; Dept. 148, E. E. Jansen.
Dept. 160, H. R. Coronado, H. C. Harringa, J. F. Meade; Dept. 171, J. R. Keene, E. G. Pringle, H. K. Stofor; Dept. 180, J. E. Legg; Dept. 192, J. P. Faketty, H. B. Reed, Dhea W. Rose, Lucille P. Sullivan; Dept. 215, Ethel R. Dunn; Dept. 218, Avis J. Christianson; Dept. 223, F. E. Heinichen, C. G. Laughlin; Dept. 400, H. L. Knight, W. B. Mellring, D. L. Williams.

ADVANCED PRODUCTS

Ten-year: Dept. 936-1, T. R. Holland.
GD/ELECTRONICS
Fifteen-year: Dept. 4, H. F. Jackson.
Ten-year: Dept. 5, M. F. Klauk, J. P. Norvall; Dept. 6, Opal M. Alexander, Phyllis J. Weis.

Promotions

CONVAIR

Promotions to or within supervision effective Nov. 6.
Dept. 2-1, President's Office: To C-141 project manager, J. M. Adamson.
Dept. 6, Engineering: To project engineer, R. W. Miller. To product support group engineer, R. H. Boggs.
Dept. 10-0, Commercial Contracts: To chief of contract administration-commercial, E. L. McDonald.
Dept. 11-1, Military Contracts: To chief of contract administration-military, A. J. Reiser.
Dept. 94-7, Data Processing: To tabulating supervisor, K. A. Kerr.
Dept. 129, Trim: To assistant foreman, E. Catton Jr.
Dept. 171, Field Operations: To assistant foreman, L. W. Putney.
GD/ELECTRONICS
Dept. 1, General Manager's Office: To manager of engineering, D. Wahl.
Dept. 6, Manufacturing: To assistant foreman, K. R. Reef, H. D. Simpson, P. A. Wengel.

Births

GD/ELECTRONICS

DUTTON—Son, Danny Owen, born Oct. 14 to Mr. and Mrs. R. E. Dutton, product service dept., Information Technology.

General Dynamics NEWS

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Project System Used For C-141

(Continued from Page 1)

Hunley, tool project engineer; material, V. M. Burns, purchasing agent; quality control, T. W. Brotherton, general supervisor inspection; controller, J. A. Dematteis, administrative accountant; communication, Leslie Hawson; systems and procedures, R. F. Shane.

Lockheed personnel based at the GD/Convair plant are: D. H. Koozer, C-141 engineering representative and his staff, William Rich, Joe Newton, William Young. W. W. Beal, C-141, purchasing representative, will have headquarters in San Diego and a quality control representative will also be located here after the first of the year.

At present GD/Convair engineers are working on initial layouts of the C-141 empennage. Current contract, awarded in mid-October, calls for five production articles and one static test tail section. Test article will be delivered in March of 1963, first production article in May of the same year.

At peak of engineering effort, anticipated in mid-1962, there should be between 60 and 70 engineers assigned full time to the C-141 project, said Miller, project engineer.

Carrying out the cooperative theme, weights, stress, structural design engineers will be consolidated in one section of Bldg. 51 third floor. Also physically located in the same area will be representatives from tooling, factory, planning, and material.

Wives at Info Tech Will Meet Dec. 14

Members of the Wives' Club of GD/Convair Information Technology group will hold a holiday meeting Dec. 14 at University Club, 1333 Sixth Ave.

Christmas festivities, including gift exchange, are planned for the 12:30 p.m. affair. Hostesses are Mrs. A. M. Barnise, AC-3-3280, and Mrs. D. A. Siebenaler, CO-2-1189.

GD/Convair Operations at SD Consolidated in Reorganization

(Continued from Page 1)

Corporation's divisions in Buffalo and Rochester, New York; manager of manufacturing at Radio Condenser Corp., in Camden, N. J.; manager of operations at Magnavox Corp., in Greenville, Tenn., and plant manager of General Electric Co., in Syracuse, N.



SIGN UP—Shirley Palmore, GD/Convair utility assembler at Information Technology, pledges United Fund support to Don Glasser, on loan from GD/Astronautics. Looking on is Clete Klein, production assurance manager, co-chairman of in-plant drive.

Mgt. Club Xmas Dance Dec. 9 At U.S. Grant

GD/Convair's Management Club, kicking off the holiday season, will stage its annual Christmas dance Dec. 9 in the U. S. Grant Hotel.

Roy Dill, club president, said "a cordial invitation is extended to all present members and those recently retired from the club due to job changes."

The informal affair will feature the music of Mark Warne's orchestra in the Palm Room and a popular combo in the Crystal Room.

Evening's festivities will include continuous serving of refreshments and the scholarship fund raffle.

Cocktail hour is planned between 8 and 9 p.m. with dancing from 9 p.m.-1 a.m.

L. G. Lawson, general chairman, said that tickets are available for \$2 per person at regular outlets and employee services, Bldg. 32, Plant 1.

INFO. TECH. PLEDGES \$10,000 IN DRIVE FOR UNITED FUND

Information Technology people of General Dynamics/Convair boosted the current United Fund drive by a gift of \$10,000 in a one-day drive this month.

The 365 employees contributed an average of \$27 each, reported Clete Klein and Don Salyers, co-chairmen of the collection at the Information Technology facility.

It is the third consecutive year that Info Tech has surpassed the "fair share" goal, averaging more than \$20 per capita.

L. H. Orpin, manager, praised all employees for their support.

Bloodmobile Donors Sign

Cards will be in the hands of General Dynamics/Convair supervision next week for signing donors at the December bloodmobile.

Date of the pre-holiday blood collection will be Dec. 7, said Ken Wulfmeyer of employee services. He reminds that the heaviest demand on GD/Convair's credit with the San Diego Blood Bank comes through the holiday season.

Engineering and experimental departments of GD/Convair and GD/Convair personnel in the San Diego plant will be asked to volunteer.

The bloodmobile will be located in the military conference room, Bldg. 4, Plant 1, from 10 a.m.-2 p.m. on the Thursday collection date.

F-102 Unit Honored As Air Guard's Best

Most effective F-102 unit in the Air National Guard is the 125th Fighter-Interceptor Group based at Imeson Airport, Jacksonville, Fla., according to a decision of the National Guard Bureau in Washington, D. C.

In recognition of the group's superior rating it received the Operational Readiness plaque from the National Guard Association at its general conference last month.

The 125th, of which 159th Fighter-Interceptor Squadron is the flight unit, rated higher than any other Air National Guard unit flying F-102s, reported C. H. Greenfield, General Dynamics/Convair field service rep. The 159th FIS has been flying Convair F-102s for 14 months.

Thanksgiving Show Set for Employees

Adams Theater in San Diego has announced a special Thanksgiving show Nov. 23 at a reduced price for GD/Convair employees.

Starting at 12:45 p.m., features are "Nikki—Wild Dog of the North" and "Thief of Baghdad." Admission with GD/Convair ID card is 50¢ for adults. Children under 12 will be admitted free if accompanied by an adult.



P. B. Johnson

R. C. Smith



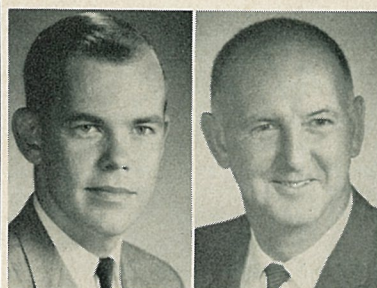
W. S. Stroud

E. S. Winlund



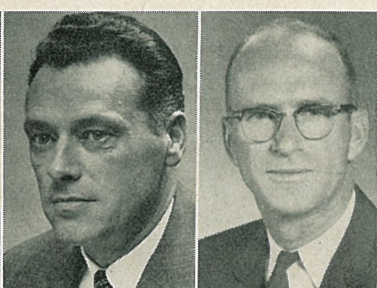
H. L. Gates

Dr. D. Wahl



J. A. Moore

J. P. Syren

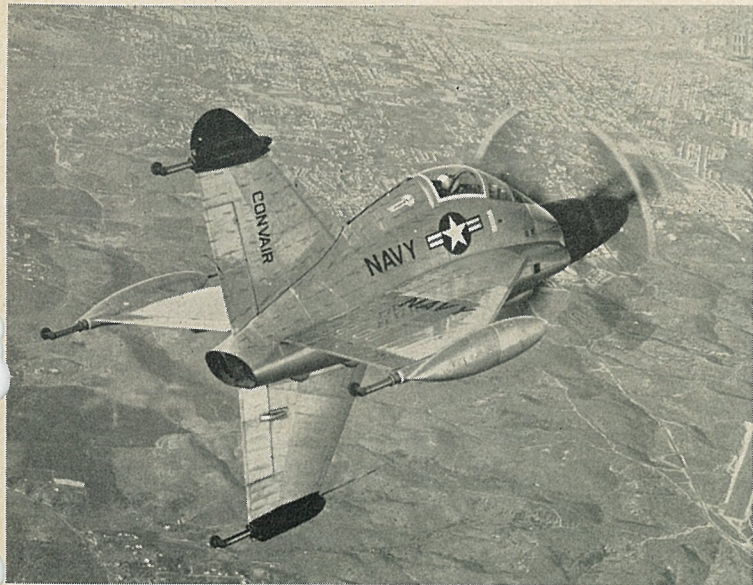


W. R. Rauth

H. C. Howe



L. H. Orpin



ANOTHER DELTA—Among most unusual aircraft built at San Diego was XFV-1, vertical takeoff fighter nicknamed "Pogo."

Novel 'Pogo' Designed For Convoy Task

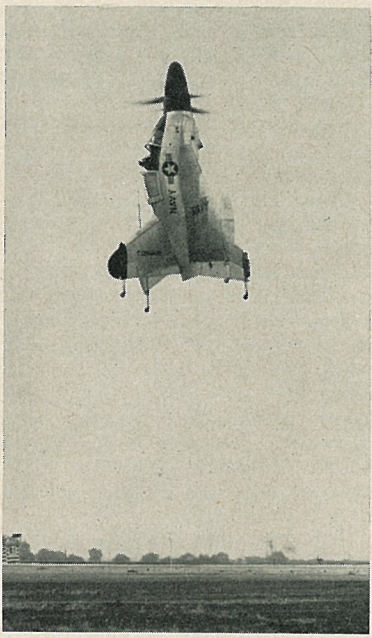
(In 72nd installment of history of General Dynamics/Convair products, XFV-1 gets attention as another application of delta wing.)

A second experimental Navy plane was the XFV-1 Pogo, winner of a 1951 design competition for a convoy escort fighter, capable of taking off from, and returning to, the afterdeck of an ordinary cargo ship. The Convair configuration employed a short, fat fuselage; stubby delta wings, and a pair of long vertical fins, one mounted above the fuselage and one below. On the ground the plane sat nose-up, resting on four caster-like wheels at the tips of the wings and fins.

At takeoff the Pogo ascended vertically until well clear of the field, then nosed over into conventional attitude to attain speeds of more than 500 mph. To land, the pilot pointed the nose skyward and settled back to the ground by "hanging on the props." A special power plant was developed for the Pogo, combining an Allison YT40-A-14 turboprop engine with a pair of 16-foot coaxial, contra-rotating, turbo-electric propellers made by Curtiss-Wright.

Since no man had flown such a craft, engineers evolved a "tethered flight" program, starting with a test stand that held a power plant and part of an XFV-1 fuselage. Under the pilot's control, this simulator could rise five feet.

Next, an elaborate mechanism for limited flight was built under the 184-foot roof of a Navy hangar at Moffett Field, Calif. Cables rose from the nose of the plane to a powered drum at the top of the hangar, running thence to a counterweight at one side. A system of cables and tension regulators was attached to the tail, letting the aircraft rise free-



GOING UP—Straight up goes "Pogo" before making transition to level flight.

ly but limiting its lateral travel.

J. F. (Skeets) Coleman, engineering test pilot, made scores of short vertical flights in the hangar during the summer of 1954, feeling out the plane's controls and characteristics. On August 1 he made the first untethered flight outdoors, rising to 20 feet; over the next two days he worked up to 150 feet. "It's more maneuverable and responds faster than any plane I've ever flown," Coleman reported. "We'll do a little more maneuvering, try a few tricks, as we go along."

Pogo was returned to San Diego and based at Brown Field Naval Auxiliary Air Station while Coleman continued testing, until he had taken the aircraft to several hundred feet, nosed it over to 30 degrees, and traveled the length of the runway. He made the transition to full horizontal attitude on a flight the first week in November, cruising for 20 minutes before returning to land on a 50-foot square. For this, the first successful VTO flight in history, Coleman was awarded the Harmon Trophy.

PHYSICIST OFFERS NOVEL THEORY ON CREATION OF SEAS

Modern scientific progress has been the result of many "off-beat" observations, but few can match the experience of a GD/Convair senior staff scientist, Dr. J. J. Gilvarry.

Sitting down for lunch in a Milwaukee restaurant five years ago, Dr. Gilvarry was intrigued by the apparent "roundness" of the oceans on a lighted globe advertising beer.

Curiosity prompted research resulting in a radical new theory, published under Dr. Gilvarry's byline as the lead article in *Saturday Review*, Nov. 4, which holds the oceans were formed by huge meteorites striking the earth.

"If this theory is correct, life in other solar systems with the same characteristics as ours would seem likely," Dr. Gilvarry explained.

Dr. Gilvarry, a recent addition to the physics section, was with RAND Corporation, Allis-Chalmers and worked on the Manhattan Project before coming to GD/Convair.

Support Supervisor Chosen For Survey

J. I. Bogle, GD/Astro support documentation supervisor, was selected by the National Security Industrial Association to participate in a material handling survey at Alameda Naval Air Station.

The survey was conducted by leading material handling specialists from government and industry, and concentrated on handling, storage and transportation.



ON THE NOSE—R. F. Stygar of GD/Astronautics uses micrometer to check accuracy of shapes milled to commands from GD/Electronics' C-180 Digimatic numerical control. Device works to .001-inch tolerances.

New Numerical Control Mill Works in Three Dimensions

Newest and most advanced among a variety of numerically-controlled shop equipment in use

at General Dynamics/Astronautics is the versatile Morey contour milling machine placed in service recently.

The device works to .001-inch tolerances in three dimensions with only one fixture setting, in response to commands from a "C-180" Digimatic numerical control system built by Information Technology group of General Dynamics/Electronics.

(Other numerical control equipment in use at GD/Astro includes a Milwaukee Matic "machining center" and two Burgmaster turret drills. These are controlled by a punched-tape method for work in two dimensions.)

Because it requires no special tooling or templates, the new contour milling machine produces Atlas missile parts economically, precisely and efficiently.

It automatically turns out parts previously produced by forging or casting.

Machine instructions are recorded with a special-purpose computer as a series of magnetic signals on one-half inch recording tape. When the programmed tape is "played back" through the C-180 Digimatic, the machine head and work table are controlled continuously throughout the entire tool path.

The work table has a movement range of 48 inches in the "X" (right-left) axis, while the head can move a like distance in the "Y" (forward-backward) axis and 30 inches in the "Z" (up-down) axis.

Rate of tool travel is programmed at speeds which are continuously variable from zero to 45 inches per minute. Sixteen spindle speeds from 20 to 3,600 rpm can be selected manually.

A variety of tools can be fitted to the standard milling tool holder.

The new device is in use in GD/Astronautics machine shop (Dept. 731) headed by W. T. Herchold, general foreman. R. F. Stygar operates the machine during first shift, and second shift operation is scheduled for the near future.

Upon its receipt and installation, the machine was "validated" (tested for conformance to specifications) by E. G. Hartdorn and F. L. Unmack of applied manufacturing research (Dept. 290-2).

Don Berkstrom and James Malis, GD/Electronics product service engineers (Dept. 320), took leading roles in placing the controller in service.

GD/Convair Machine to Reduce Costs and Production Time

First automatic milling machine purchased by General Dynamics/Convair for use in its commercial programs is now undergoing acceptance checkouts. Another, a profile contour milling machine, is on order for mid-1962.

Although numerically-controlled machines have been in use at Plant 2 the last few years during the F-102 and F-106 programs, they were installed and owned by the Air Force. The Milwaukee Matic machine installed in Bldg. 1 at Plant 1 the first of this month is the first ordered by GD/Convair.

Two others are located in the San Diego area—one at GD/Astronautics main plant, and the other at Fluidgenics Co., National City.

The new machine, expected to cut costs and production time in future programs, should be turning out parts for both GD/Convair and GD/Electronics within the next few weeks, said J. R. Condit, facilities equipment engineer.

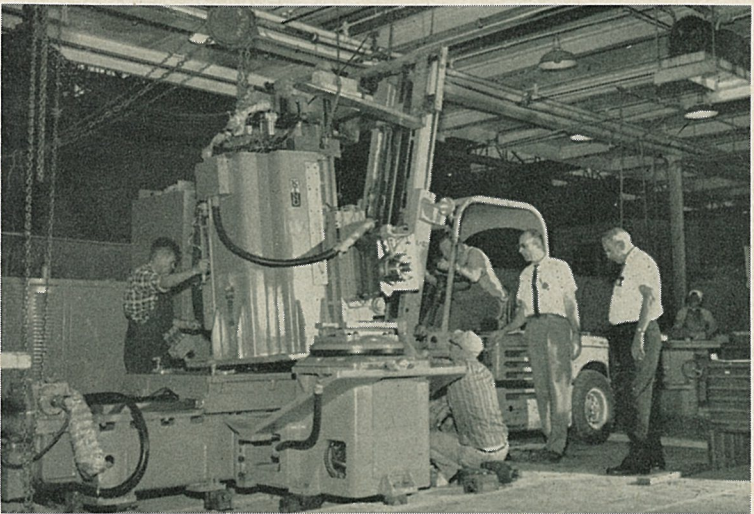
All operations—milling, drilling, tapping (or threading), boring—are controlled by punched tape to tolerances as close as .0005 of an inch. It stores 31

tools of various types for different functions. It will select the proper tool for the job from the storage drum and transfer it to the work spindle from taped instructions.

It will be used to machine castings, forgings, intricate and complex airplane components such as valve bodies, supports and brackets, housings, bell cranks, from either aluminum or steel.

At the manufacturer's, Kearney & Trecker Co., Milwaukee, Wis., plant last month for preliminary performance and acceptance for shipment checkouts were Condit; S. C. Padilla of applied manufacturing research; Harry Cooper and Bob Schweitzer of tooling's numerical-controlled programming section. Padilla, Cooper, and Schweitzer remained another week to attend the manufacturer's programming school.

Bob Miranda, Dept. 24 electrical design; Odell Browning and John Evans of plant engineering maintenance attended a maintenance school there early this month. Operators will be trained at the Convair plant by Milwaukee Matic application engineers. Installation was made by Kearney & Trecker field engineers under direction of Joe Long.



INTO PLACE—Carefully positioning new numerically-controlled milling machine in GD/Convair Bldg. 1, Plant 1, is crew from plant engineering (from left) Kenneth Morgan; Bill Hoyt (kneeling); William Gillikin, controlling lift; B. E. Ahring, Dept. 25-5 assistant foreman; and (at far right) Jack Condit, facilities equipment engineer.

Lachman Named to Board Of 'Seven Seas University'

A GD/Convair administrator was recently selected to join such men as Ralph Bunche, David Saranoff, and the Crown Prince of Japan as a board member for the University of the Seven Seas.

Millard S. Lachman, executive development administrator, long active in San Diego educational

circles, was elected to a three-year term for the "floating" university.

"Approximately 400 students from every nation in the free world spend a semester on board the S.S. Jerusalem participating in formal class study and touring areas of debarkation," he said.

Currently chairman of the San Diego Chamber of Commerce Education Committee, Lachman explained that "the university is a broad and exciting new concept in international education using the world as its lab."

San Diego has been selected as West Coast port with the fall semester, 1962, slated for first voyage.

Lachman, a six-year seminar leader in UCLA's graduate school of business administration, recently completed his 16th year at GD/Convair.

'Big Boom in Forming' Article to Appear

An article by GD/Astronautics' W. W. Cain, engineering practice standards (Dept. 522-4), will appear in the nationally-distributed periodical "Analog Science Fact and Fiction" early next year.

Titled "Big Boom in Forming" the illustrated article concerns various types of high energy rate forming, including explosive forming and General Dynamics' Dynapak, Hydopak and Magnapak methods.

Open House Planned By Model Railroaders

Model railroaders at GD/Convair and GD/Astro will observe National Model Railroad Week, Nov. 26-Dec. 2.

They will assist in open houses throughout the entire week at model railroad headquarters, House of Charm, Balboa Park. It will be open to the public Sunday afternoon and 7:30 to 10 p.m. each evening next week.

Dec. 22 at Hotel Del Chosen For Info Tech Annual Xmas Dance

Plans are under way for the annual Christmas Party for General Dynamics/Electronics Information Technology people and their guests, set this year for Dec. 22 at Hotel del Coronado.

Reservations will be open about the first of the month, said Ray Mattas, Recreation Committee chairman.

Present plans call for a buffet dinner from 7:30 to 10 p.m.; social hour starting at 6:30 p.m.; dancing from 8:30 p.m. to 1:30 a.m.

Committee in charge includes Sue Chappell, tickets; Don Hall, publicity; Bill Redwood, entertainment; Les Eischen, door prizes.

Dynamics Receives Air Safety Award

General Dynamics Corporation received an Air Defense Command safety award this month for support of the ADC Life Saver Ground Safety program.

The award was accepted by J. H. Famme, GD/Convair vice president and general manager, from Lt. Gen. R. H. Terrell, USAF, vice commander of ADC, at ceremonies in Colorado Springs, Colo.

General Dynamics is one of the companies supporting and participating in Air Defense Command ground safety campaigns conducted at ADG installations.

Cynthia White Beauty Winner

A General Dynamics/Convair daughter reigned over the 15th annual El Cajon Mother Goose Parade last Sunday.

Holding the Cinderella Princess title for this year is Cynthia White, 17-year-old daughter of Bruce (Dept. 119) and Lou (Dept. 400-8) White.

Entry from El Capitan High School, Lakeside, Cynthia won over eight other finalists on a basis of charm, poise, personality, and beauty. She was crowned at a coronation ball at the El Cajon Elk's Club Nov. 4.

Original contestants represented high schools in the Grossmont district. The field started with 122 girls Oct. 1. Finalists were selected on a point basis for selling memberships in the Mother Goose Parade Association.

Along with the title Cynthia won prizes and Hollywood trip.



PRINCESS—Cynthia White, GD/Convair daughter, is crowned Cinderella Princess for Mother Goose Parade by 1960 Princess Janice Baker. — Photo courtesy of El Cajon Valley News.



PILOTS WANTED—Shown before stepping into cockpit of private plane, W. W. Frase is spearheading drive to enlist aspiring pilots from GD/Convair in reduced rate lessons. Interested persons may call Frase, ext. 796, Plant 1.

GD/Convair Con-Trib-Club Reports:

GENERAL DYNAMICS/CONVAIR EMPLOYEES CON-TRIB-CLUB STATEMENT OF FINANCIAL CONDITION SEPTEMBER 30, 1961	
Assets	
Total assets—cash in bank	\$42,153.51
Account payable—Emergency Aid Fund	\$ 2,701.64
Surplus fund	39,451.87
Liabilities and Surplus Fund	
Total liabilities and surplus fund	\$42,153.51
RECEIPTS AND DISBURSEMENTS OCTOBER 1, 1960 TO SEPTEMBER 30, 1961	
Total Receipts	\$261,259.85
Disbursements:	
Alpine Youth Center	\$ 500.00
American Brotherhood for the Blind	500.00
American Cancer Society	5,400.00
Antelope Valley Community Chests	8,000.00
Arthritis and Rheumatism Foundation	1,000.00
Big Brothers of San Diego County	500.00
Boys Clubs of San Diego County	6,250.00
Boy Scouts	8,500.00
Camp Fire Girls	2,000.00
Children's Hospital Society—Los Angeles	1,140.00
Christian Business Men's Committee	1,000.00
City of Hope	1,250.00
Crossroads Foundation	1,250.00
Crippled Children's Society—Los Angeles	250.00
Diabetic Assn. of Southern California	190.00
Encinitas Youth Recreational Committee	500.00
Episcopal Community Service	1,231.00
Family Service Associations	5,000.00
Foundation for Junior Blind	300.00
Girls Clubs of San Diego County	2,250.00
Girl Scouts	4,000.00
H.E.A.R. Foundation	500.00
Hillcrest Receiving Home	1,000.00
International Guiding Eye	1,000.00
Jamul-Los Flores Community Club	150.00
John Tracy Clinic	250.00
Lakota Tarca Oyanke	150.00
Los Angeles County Welfare Agencies	1,000.00
Multiple Sclerosis Society	1,000.00
Muscular Dystrophy Assn.	1,000.00
National Cystic Fibrosis Research Foundation	1,000.00
Neighborhood House	1,000.00
Otero County United Fund	1,000.00
Pathfinders of San Diego, Inc.	1,500.00
Salvation Army	2,700.00
San Diego Children's Dental Health Center	1,500.00
San Diego Children's Home Assn.	1,000.00
San Diego Council of Churches	1,000.00
San Diego County Assn. for Retarded Children	3,750.00
San Diego County—Edgemore Geriatric Hospital	2,500.00
San Diego County Epilepsy Society	1,000.00
San Diego County General Hospital	1,000.00
San Diego County Heart Assn.	5,000.00
San Diego Traffic Safety Council	500.00
San Diego County Vauclain Home	700.00
San Diego Mental Health Assn.	1,000.00
San Diego Society for Crippled Children	4,000.00
San Miguel Hospital Assn.	5,000.00
Sharp Memorial Hospital	600.00
Sheltered Workshop	1,000.00
Sunnyside Guild	2,250.00
Travelers Aid Society	500.00
United Cerebral Palsy Foundation	2,000.00
United Fund	125,000.00
United Jewish Foundation	1,000.00
Volunteers of America	1,000.00
Y.M.C.A.	7,000.00
Y.W.C.A.	1,000.00
Total charitable contributions	\$233,261.00
Transfers to Emergency Aid Fund	25,335.06
Accounting and audit expense	800.00
Total disbursements	259,396.06
Excess—receipts over disbursements	\$ 1,863.79

GD/ELECTRONICS TO DANCE DEC. 15 AT ANNUAL PARTY

All General Dynamics/Electronics people in the San Diego area are invited to celebrate the holidays at the annual Christmas party, sponsored by former Military Products group.

Set for Dec. 15 at the Wagon Wheel at Santee, east of San Diego, party hours are from 8 p.m. to 1:30 a.m.

Van Woody's 11-piece orchestra will furnish music for dancing; door prizes and snacks will be provided.

Tickets, at \$1.50 per person, are now in the hands of all department clerks.

In charge of arrangements is Peggy Tracy, general chairman, and committee members, Mac Larsen, reservations; B. D. Skillman, entertainment; Flora Davis and Kay Anderson, prizes; Paul Biquette, publicity; Len Hanson, tickets.

Jim Sugg Elected Rockhound Prexy

A new slate of officers was elected for 1962 at a recent CRA Rockhound Club meeting.

Jim Sugg was tapped for president while George Goetzleman was voted vice president; Carmelita Swarts, secretary; and Margaret Dunivan, treasurer.

Selected as board of control members were B. R. Swarts, Harry (Smokey) Kinghorn, Gerald Marcello, Dorcus Utter, Frank Gallik, Betty Goetzleman and Robert Chambers.

Plans were made for a surprise visit by "Santa" to the annual Christmas party, Dec. 14, Gillespie Field Clubhouse.

CAMERA CLUBBERS SLATE PARK MODEL SHOOT

GD/Convair's camera bugs will stage a model shoot Nov. 26, at 7:30 p.m., Photo Arts Bldg., Balboa Park. Club spokesman, Ron Ainsworth, said all interested persons are invited.

Key Personnel For American Trained in 990

Top American Airlines flight and training superintendents and managers from all over the network this week completed a three-week 990 ground school flight training course taught by their own instructors at General Dynamics/Convair.

W. W. Braznell, American's assistant vice president of flight from New York, headed the group of 18 key personnel and 10 flight engineer and pilot instructors who arrived at the San Diego plant the first of this month. He was accompanied by T. F. Copeland, director of flight training, New York.

Classes, conducted with assistance of GD/Convair production flight instructors, were coordinated by R. L. Bisbee, superintendent ground school programs for American. All AA instructors had received initial ground school training in GD/Convair courses earlier this year.

Next American Airlines classes on the 990 will start this month in New York City.

Other American Airlines courses now in progress at GD/Convair are four maintenance groups in the customer service training area. Beginning Nov. 13 was the third American Airlines Management Orientation course, and classes in engine run-up, power plant, airframe systems. GD/Convair customer service instructors will assist.

All American Airlines groups are receiving cockpit procedures trainer familiarization while at the San Diego plant.

Scholarship Plans Drawn

Plans for the 14th annual General Dynamics/Convair Management Club scholarship contest get under way this month.

Keith Blair, who heads contest arrangements for the second year, said that complete eligibility rules and application blanks will be in the hands of all San Diego area high school officials shortly after the Christmas holidays. In-plant posters and notices will be displayed.

Sons and daughters of both GD/Convair and GD/Electronics (San Diego area only) employees will be eligible. They must be graduating from high school in 1962 and meet other eligibility requirements.

As in the past, awards will be scholarships of \$1,000 each to the top boy and girl and \$100 to the two boys and girls who finish as runners-up.

Named to direct the coming contest is the same committee which was in charge of the 1961 scholarship awards.

Complete roster is: Blair, Dept. 50, ext. 1543; H. E. Mayer, Dept. 50, ext. 2209; Ray Lange, Dept. 46, Rose Canyon ext. 2111; E. H. Amory, Dept. 34, ext. 1577; P. J. Fitzgerald, Dept. 34, ext. 2796; Ted Houk, Dept. 34, Rose Canyon ext. 2605; R. H. Nall, Dept. 3, ext. 2568; Clair Taylor, Dept. 400, Plant 2 ext. 492; Barbara Vincent, Dept. 91, ext. 2215; J. W. Woodhouse, Dept. 23, ext. 1314.

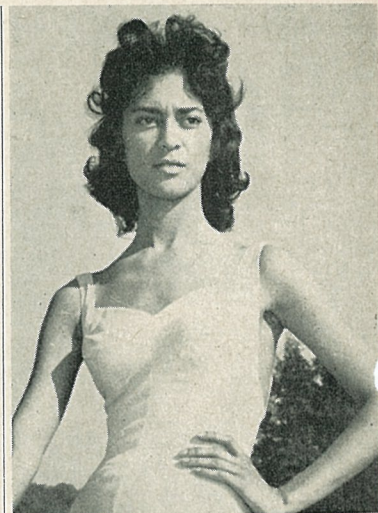
Guadalupe Clinic Gets Major Share Of October Gifts

Employees' Con-Trib-Club Committee at General Dynamics/Convair disbursed nearly \$7,000 during October.

Largest amount, \$3,000, went to Guadalupe Clinic at Mercy Hospital. Committee member, W. A. Ebel, made the presentation at the clinic's dedication Oct. 22.

The committee voted \$500 to American National Red Cross "Carla Appeal" for use in Texas hurricane-swept areas.

Wheelacade, Inc., received \$500 for two wheel chairs; Rancho Los Amigos Hospital, \$1,500; and Children's Hospital, \$1,000. All money remaining in the Antelope Valley fund was divided equally between GD/Convair division and Astronautics' off-site facility at Edwards Rocket Site.



Lois Rollins

CONVAIR DAUGHTER STUDYING, TEACHING DANCING IN HAITI

Lois Rollins, 19, daughter of Isaac Rollins of General Dynamics/Convair, is realizing a dream few girls attain—traveling to far-away places, and, at the same time, furthering her dancing career.

The attractive graduate of San Diego High School flew to Port-au-Prince, Haiti, the first of this month to join the Katherine Dunham Dance Troupe. She will be there for several months, perhaps a year, teaching and studying.

Lois, whose father (Dept. 16-9) has been with GD/Convair over 15 years, has studied dancing since childhood. She attended the Perry-Mansfield School of Dance in Colorado on a scholarship for two summers.

After her graduation from SD High in 1960, she spent a year at Knoxville College, Tenn. She was in her sophomore year at Los Angeles City College this fall when she received the invitation to join the Dunham Troupe.

She plans to continue her college work, her father says, majoring in social sciences.

Bargain Xmas Trees Coming

Bargain-rate Christmas trees again will be available to both GD/Convair and GD/Astro employees this season.

Sales begin Friday, Dec. 8, and continue through Wednesday, Dec. 20, between 10 a.m. and 9 p.m.

Prophet Co. will operate the sales lot at Convair CRA Clubhouse on the east side of Pacific Highway opposite Convair's employment office at Plant 1. Parking lots are open to tree shoppers after normal shift hours.

This year 800 prime farm-grown trees from Washington state will be available. Prices are from 79 cents to \$4.25.

One-day service is offered those desiring painted trees, although orders must be placed at the lot.

Ex-Hockey Player? Team Is Organizing

Former hockey players now working at GD/Convair or Astro are sought to bolster an already-organized hockey team representing San Diego.

The team plays in the Los Angeles and Burbank area. Interested parties may contact Jerry Murdock at ext. 3704, Astro.

Roller Skate Night Changed to Dec. 4

December's IRC roller skate night has been changed to Dec. 4 because of holiday conflicts.

GD/Convair skaters can pick up free tickets at employee services, Bldg. 32. Monthly get-togethers are held at Skateland, Front and "G" Streets.

RADIO CLUB CHANGES MEETING DATE

Radio hams from GD/Convair will meet tonight (Nov. 22), 8 p.m. at club headquarters on Harbor Drive instead of tomorrow evening, Jim Lack, commissioner, announced. Change is due to Thanksgiving holiday.



TURKEY AND CHICK—Donna Wright (Dept. 1-31) inspects one of 67 "big tom" turkeys won by members of more than 18 CRA clubs as they roll down production line and onto some lucky GD/Convair employees' Thanksgiving tables.

Sports & Recreation

CRA Thanksgiving 'Birds' Won By 67 Club Members

Thanksgiving's traditional turkey dinner will be a "free affair" for 67 lucky GD/Convair employees.

More than 18 clubs have awarded CRA turkeys (in the form of certificates) to top competitors or given them away as door prizes.

Turkeys "ready to bake" can

be obtained by presenting certificates at CRA clubhouse.

Clubs distributing "holiday birds" include Bowling, 26; Tennis, 4; Bridge, 1; Roadrunners, 1; Pistol, 4; Radio, 1; Coin Club, 1; Riding, 1; Delta Divers, 1; Aero-modelers, 4; Glider, 1; Hoedowners, 2; Rockhounds, 1; Ice Skating, 1; Golf, 8; Garden, 8.

In addition, two will go to winners of the "8" ball pool tournament.

GD Keglers Win Tourney

Keglers from GD/Convair and GD/Astro "bowled-over" all opposition in a clean sweep of the 10th annual Industrial Recreation Council tournament Oct. 28-29 and Nov. 4-5.

Staged at Pacific Recreation lanes, the Astro Five swept first place in men's division and GD/Convair's Astrocons rolled to first place in mixed. Women's division was captured by GD/Convair's Fill-Ins.

Competing against 77 other teams, 11 General Dynamics' torrid bowling teams piled up all new tournament records.

Individual winners included Clara Weide (wife of Ralph Weide), high scratch, 230; Gloria Schneider, 611 handicap series; Nancy Tatum, 560 scratch; and Tony Zullo, high game with 258.

Winning team captains were Zullo, Astrocons; Helen Kiesel, Fill-Ins; and Bill Geopfarth, Astro Five.

WATER SKIING CLUB PLANS WEEKLY MEET

GD/Convair's Water Skiing Club will schedule skiing once a week in November and December on a phone call basis, according to Commissioner Gene Seigny. Interested persons should call Seigny, ext. 1032, Plant 1.

CRA Calendar

(Convair Recreation Association has some 40 activities in operation. For information on Convair sports, call CRA headquarters, ext. 1245, Plant 1.)

* * *

ARCHERY—IRC trophy shoot Dec. 10, Balboa Park Field Range.

BRIDGE CLUB—Weekly sessions each Tuesday, 7:30 p.m., Barcelona Hotel, 326 Juniper St.

CAMERA CLUB—Model shoot Nov. 26, 7:30 p.m., Photo Arts Bldg., Balboa Park.

FENCING—Workouts and instructions each Friday night, 7-10 p.m., YWCA, Tenth and C Sts.

GOLF—CRA tourney Dec. 2-3, Circle R course. For reservations call ext. 1705, Plant 1, by Nov. 27.

ICE SKATING—Skating sessions each Thursday, Iceland, 6055 Lake Murray Blvd., 6:30-8 p.m.

JUDO—Instruction each Thursday, 7 p.m., CRA Clubhouse, Pacific Hwy.

MODEL RAILROAD—Open house, House of Charm, Balboa Park, 7:30-10 p.m., Nov. 26-Dec. 2.

MOVIES—Reduced price movies each Friday, Saturday, Sunday at Adams Theater, 3325 Adams Ave. Admission: adults, 50¢; children under 12 free if accompanied by adult.

PISTOL CLUB—Next shoot Nov. 26, 9 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB—Meeting date changed to tonight (Nov. 22), 8 p.m., Harbor Drive headquarters.

RIDING CLUB—Dinner-dance Dec. 2, Gillespie Field Clubhouse, 4-10 p.m. For reservations call Lou Barbour, HO-6-6536.

ROCKHOUNDS—Christmas party Dec. 14, Gillespie Field Clubhouse.

ROLLER SKATING—Convair skate night Dec. 4, Skateland, Front and G Sts. Free tickets at employee services, Bldg. 32, Plant 1.

WATER SKI CLUB—Skiing once a week on phone call basis through November and December. Call Gene Seigny, ext. 1032, Plant 1.

Bad Pennies, Raiders Stay on Top in Mixed

Bad Pennies and Raiders were still the big one-two punch Nov. 9 in GD/Convair's Engineering Mixed bowling league.

Racking up 29 wins and 11 losses, Bad Pennies remained ahead of the Raiders who had compiled a 25-15 win-loss record.

A tie for third place between Interceptors and Alley Oops was broken when the "Oops" moved ahead and grabbed firm control of third position.

Four of a Kind had high team score with 837; Interceptors, high team series, 2475; Joan Meairs, high woman's individual game, 214; Pauline Steel, high woman's series, 612; Ollie Harper, high men's individual game and high series, 271 and 684.

Mask of 'Santa'

CRA Golfers Slate Tournament For Circle R Course Dec. 2-3

CRA's Golf Club will assume mask of "Santa" when local golfers tee off Dec. 2-3 at the Circle R course.

Hams will go as "gifts" to winners. Reservations can be made today (Nov. 22) through Nov. 27 by calling ext. 1705, Plant 1.

Six victors in Coronado tour-

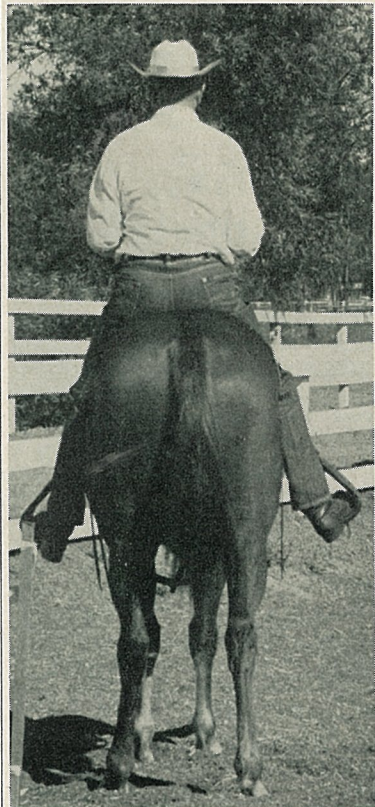
ney walked away Nov. 4-5 with turkeys and seven others donned golf caps as runner-up prizes.

Ralph Long (Dept. 218) stroked 76 for top honors in low gross, 0-14, while Dick Ramsdell and Ray Minutello tied for second with scores of 80.

Low net in 0-14 class fell to Andy Simington Jr., (Dept. 48) for a score of 66 and Fred Wells (Dept. 3) was close behind with a 69.

Other "bird" winners were, Norb Ruemping (Dept. 6), low gross, 15-21, 85; J. Mayer (Dept. 223), low net, 15-21, 67; D. Plinario (Dept. 48), low gross, 22 and over, 88; and Dick Parsons (Dept. 11), low net, 22 and over, 67.

Golf cap "donners" were, Bob North (Dept. 6), low gross, 15-21, 86; John Jodka (Dept. 91), low net, 15-21, 68; Bob Hibbs (Dept. 8), low gross, 22 and over, 94; and Dave Proctor (GD/Electronics), low net, 22 and over, 68.



NO!—Horse and horseman (V. V. "Tommy" Thomason) were unmoved by cameraman's pleas to turn around. So . . .

Two Records Fall At Archery Match

Two records were smashed at the Archery Club's novelty match when the largest number of bowmen ever to shoot at Balboa Park range turned out.

Al Phipps, commissioner, said 88 archers converged on the park range to compete for turkeys Nov. 12.

Covered by Channel 10, highlights of the match will be shown tonight (Nov. 22) at 7 p.m. on Lute Mason's "Sports Unlimited" program.

"This was a warm-up for the IRC trophy shoot which will feature 14 animal targets, 14 hunter targets and 28 field targets Dec. 10," Phipps said.

Recreation Leaders Election Scheduled

Members of the Information Technology Recreation Committee will be selected during December, announced Ray Mattas, chairman.

Nominating petitions will be posted on bulletin boards in the Hancock St. main plant for convenience of all Info Tech personnel. Members chosen will represent employees on the committee during the coming term.

Dinner-Dance Set by Riders

An appreciation buffet-dinner topped off with western renditions of Roy Wilson's band is slated Dec. 2 by GD/Convair's Riding Club.

Reservations for the dinner-dance should be phoned to Lou Barbour, chairman, HO-6-6536.

Dinner will be served at the Gillespie Field Clubhouse, 4 p.m. with dancing until 10 p.m.

In other activity, 47 senior and 18 junior club members attended the Jr. Riders Halloween party Nov. 4. Betty Sims organized games for "young and old" and Wilson's group provided music.

A vote of thanks was given the Color Guard for a year's "outstanding work" and sympathy extended Foster Kelly for loss of his parade horse in an automobile accident.

Holiday turkeys went to Hap Manion, Paul Sims, Opal Upchurch, Turner Albright, Elizabeth Holman and Flora Mansir.

FENCERS COMPETE IN MEET IN PARK

Innovations met members of the joint ARA-CRA Fencing Club at a dual meet at Inglewood Park, Los Angeles, late last month.

Rather than on the usual three-by-ten-meter strip, events were fenced on the grass with no boundaries defined. Also featured was a one-touch elimination epee match in which contact was indicated by ink-dabbed weapon tips which left a smear on opposing fencers' white uniforms.

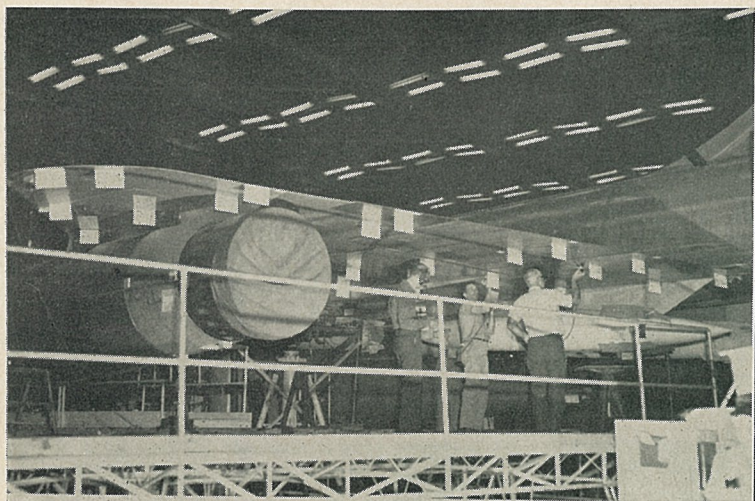
Club members taking part included Astro daughter Barbara Proppe, who advanced well into the finals of a women's foil event; Dick Jones, GD/Convair Dept. 160, and his son, Dan; and Mike Hurley, GD/Astro Dept. 597-1, ARA commissioner.



HOEDOWN-JAMBOREE—Over 130 "high steppers" from Southern California converged on San Diego recently for All-General Dynamics Hoedown-Jamboree. Shown above (left) after



leading square dancers in Grand March are Commissioners and wives (l-r), Dorothy and Maury Scholz, GD/Convair; Mr. and Mrs. John Warren, GD/Pomona; Rosemary and Marty Stutz, GD/Astro.



"FLOATER"—In center GD/FW project structures engineer A. C. Murphy points to air-filled tire on wing jack used to suspend Hustler No. 42 in vibration test. Vibra-

tions were checked constantly at eight stationary points (left) in addition to roving checks. At right vibrations are fed into machine and data recorded in foreground.

Value Control Programs Gain With Over 1,000 Indoctrinated

Over 1,000 General Dynamics men have been indoctrinated in value control principles since the program, aimed at better quality for less cost, was initiated.

Pioneering the movement was GD/Pomona three years ago. Since the program was made plant-wide in late 1959, over 600 have been trained in application of value control techniques. The 15th seminar there was concluded last month with net savings since January, 1960, from projects completed at near \$2 million.

By the end of this year, all executives at GD/Pomona will have attended orientation sessions. Heading Pomona's organization is Ed Heller, who as value control coordinator, is responsible for the program's application in all major departments.

Close on the heels of GD/Pomona were Astronautics and Fort Worth Divisions. At Fort Worth, 400 graduated from 10 seminars during the program's first year. Bill McMurtry of educational services has been in charge of coordination. However, this fall B. G. Reed, vice president-operations, was named to head a value control review board for correlation of all value control efforts.

Astronautics is conducting its 16th value control seminar. Sessions have been scheduled consecutively since the program was formally inaugurated a year ago. Up to this point, 220 have been trained, Everett Lindem, educational services coordinator, reported.

At GD/Convair, almost 100 supervisors attended a familiarization course in May, 1960, under educational services arrangements.

Stress on value control has been pointed up with recent appointment of H. P. Williams as value control manager. First seminar in the new program opens next Monday (Nov. 27) for 40 men chosen from departments throughout the division.

An executive seminar was held early this month at San Diego under auspices of E. Warren Feddersen, General Dynamics director of manufacturing engineering. Heller conducted the sessions.

47 Jet 880s Flying Over Airline Routes

Convair 880s in passenger service—47 are now flying over domestic and foreign routes—had piled up a total of 75,870 hours flying time by the end of October.

Time was counted from May, 1960, when the first 880 went into service with Delta Air Lines. Now carrying passengers are 11 with Delta; 20, TWA; 6, Northeast Airlines; 880-Ms are with Alaska Airlines, 1; Swissair, 2; Japan Air Lines, 3; Viasa of Venezuela, 2; Civil Air Transport, Formosa, 1; Federal Aviation Agency, 1.

B-58 'Suspended in Air' For Flutter Testing Of Multi-Weapon Shape

General Dynamics/Fort Worth engineers recently ran what may be the first ground-vibration tests ever conducted in this country on a big bomber "suspended in air."

Tests measured flutter conditions on a B-58 modified to multiple-weapon configuration. Results will be combined with aerodynamic and damping forces in a complete flutter analysis.

Vibration tests are routinely run on planes while they are being supported by their landing gear.

But the big Hustler—thanks to the ingenuity of GD/FW engineers—assumed an "in-flight" posture by resting on four regular B-58 tires.

The four air-filled tires lay horizontally on air springs atop four airplane wing jacks, located on either landing gear and forward jack points. Pressurized air from four adjoining tanks permitted air to leave and re-enter each tire as the B-58 moved because of various vibrations fed into the plane.

"Since we had No. 42 literally floating on air, we attained a free-free state, wherein no external restraint was exerted," said A. C. Murphy, project structures engineer. "It's as if the plane were actually suspended in space."

Vibrations from one-half to 15 cycles per second were fed into the plane in a number of program combinations. These were induced through eight electromagnetic shakers, four of which are placed on outboard nacelles, two on inboard nacelles, one on the nose and one on the plane's tail section.

Vibration was measured by accelerometers. In addition, engineers used roving accelerometers to make periodic checks over the airplane.

"Individual measurements were, of course, always analyzed in relation to measurements made at other points," Murphy pointed out.

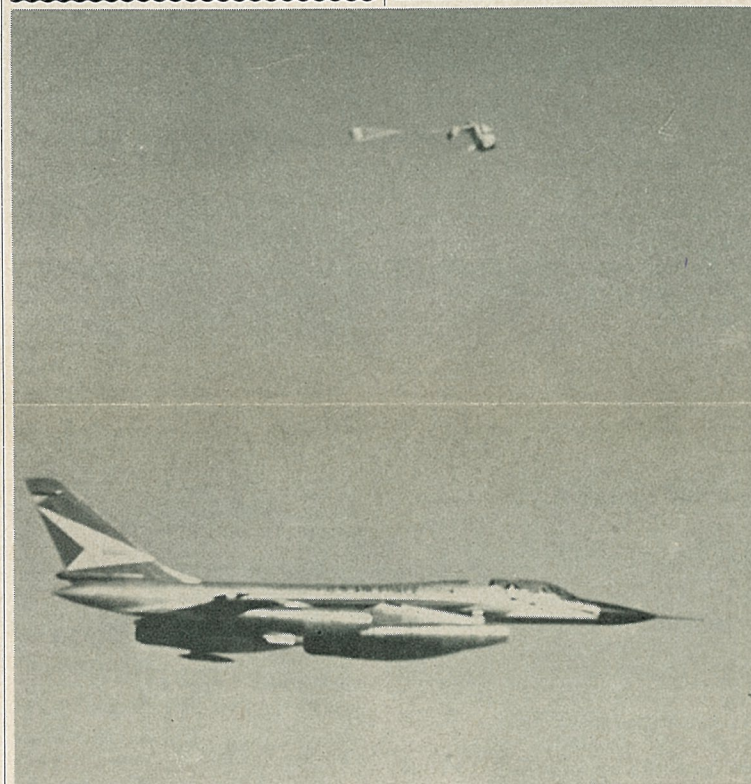
Murphy said the method used to "float" No. 42 is believed to be unique in this country, although the English have conducted similar tests.

The Hustler weighed in at about 150,000 pounds.

Primary purpose was to prove that the modified Hustler—like all other models—is flutter-free.

ASTRO SAFETY CHIEF GETS COUNCIL POST

J. W. Garrison, General Dynamics / Astronautics chief of safety, has been elected to head the membership committee of the Aerospace Sectional Executive Committee, National Safety Council.



UP AND AWAY—Second successful in-flight ejection of escape capsule from B-58 was carried out last week at Edwards AFB. Small stabilizing chute opens as capsule is ejected about 250 feet above speeding Hustler. Capsule dropped 5,000 feet before main chute opened, floating capsule to earth.

Four Flight Crews Kept Busy As Jet 990 Crisscrosses U.S.

Four flight crews are keeping a Convair 990 flying day and night, practically around the clock, in the last phase of the test program which will culminate in a Federal Aviation Agency revenue ticket.

Plane No. 6 is flying back and forth across the country in functional and reliability checkouts. In two days last week it made three round trips to Miami, Fla. First flight in F&R left San Diego at 7:22 a.m. the morning of Nov. 13, arrived in Miami in exactly four hours. Returning, the plane touched down at Houston; and at Fort Worth, Tampa, and Phoenix on other flights.

Although basic routes will take the plane cross-country to Florida and back throughout F&R flights, side trips will be made to Baltimore and New York. Testing the plane over flights of various lengths, simulating actual airline operations, crews make hops of 350 miles, 1,200 miles, and over.

Crew captains alternating on the flights are W. D. Carrier, W. B. Harwell, A. P. Wilson, and John Knebel. Passengers include FAA inspectors, American Airlines, General Electric Co., and

General Dynamics/Convair representatives.

Flights will continue into December with final certification scheduled before the end of the year.

In other FAA certification testing, checkouts have been completed on the Bendix autopilot installed on 880-Ms going to FAA, Alaska Airlines, and Swissair.

Materials Expert Authors New Book

Dr. R. F. Rolsten, GD/Convair materials research expert, is the author of a recently-published book dealing with new materials processes entitled "Iodide Metals and Metal Iodides."

Rolsten joined GD/Convair last year. He spent ten years in research at E. I. du Pont de Nemours, Battelle Memorial Institute and Ohio State University where he received his Ph.D.

880-M Performance Perfect in October

Alaska Airlines' Convair 880-M jetliner recorded a 100 per cent performance during its second full month of operation, R. W. Gilbert, the airline's executive vice president, reported.

During the month of October the "Golden Nugget Jet" operated every one of its scheduled 31 round-trip flights between Seattle and Alaska. The jetliner was flown to Seattle after its delivery at the San Diego plant the end of July.



BRIEFING—GD/Pomona's Ed Heller, value control expert, this month conducted special value seminars for selected groups in Bldg. 19 at San Diego.

GD/Astro Scholars Graduated With Distinction by SD State

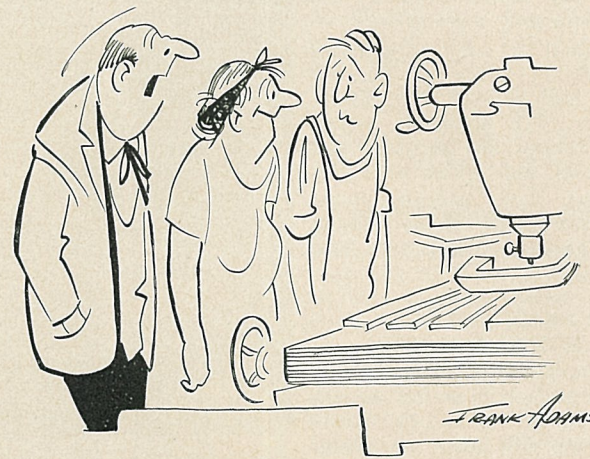
Seven recent San Diego State College graduates, all attending on GD/Astronautics scholarships, achieved major academic recognition during undergraduate careers.

James L. Crock, who graduated with highest honors and distinction in accounting in June, has received the Elijah Watt Sells Award for an outstanding score in the Uniform Certified Accountant Examination. He was among 12 singled out for the award from

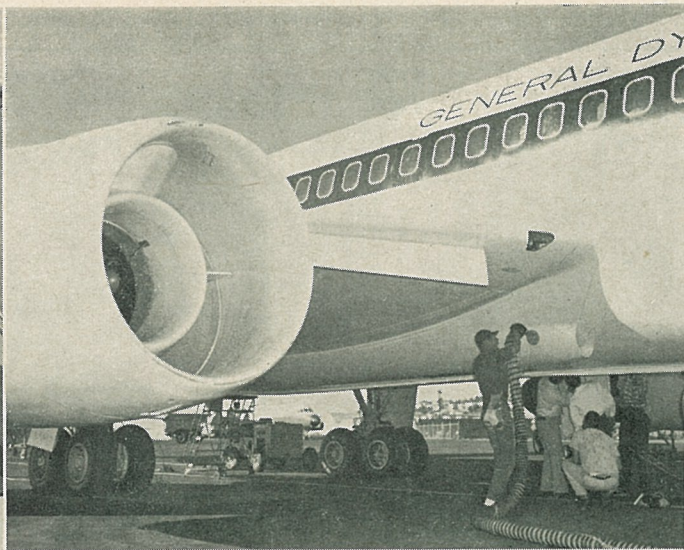
over 11,500 candidates.

Other scholars honored upon graduation were Edwin W. Barrett, honors and distinction in accounting; Larry C. Brown, honors and distinction in chemistry; and Alfred B. Hughes, high honors and distinction in physics.

Also, John McBride, distinction in engineering; James L. Shores, honors and distinction in mathematics; and Louis G. Tramonti, high honors and distinction in engineering.



"Can you put Mrs. Brown on a machine that will give her something to think about while she talks?"



990 HIGHLIGHTS—At far left, C. R. Smith (right), American Airlines president, and J. H. Famme, GD/Convair vice president and general manager, try out lounge in American Airlines Convair 990 jet airliner at San Diego. Center is 990 caught refueling at GD/Convair on brief stop during functional and reliability test program

which took it cross-country round the clock; at far right, FAA inspectors aboard are Mike Brego, F. R. Beemon, R. J. Bowers. Other FAA men on F&R flights included Rudy Kapustin, Jim Butler. F&R program may be concluded this week; FAA certification of 990 is slated by end of year.

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Wednesday, December 6, 1961

Famme Orders Searching Look At Procedures

A searching scrutiny of all established procedures was ordered last week by J. H. Famme, vice president and general manager of General Dynamics/Convair, as he opened the first of a new series of value control seminars.

Forty men chosen from top management gathered Nov. 27 for the first session of a two-week course in value control techniques organized by H. P. Williams, newly-appointed manager of value control at GD/Convair.

Thirty GD/Convair and GD/Electronics division executives and staff members met the next day for the first executive course under the re-emphasized program. E. D. Heller, GD/Pomona value control coordinator, conducted it.

Seminars will continue after the first of the year until all supervision to the assistant foreman level and other people in key positions are indoctrinated, said Williams.

"Value control attacks excessive cost in products and practices," stressed W. G. McMurry, GD/Fort Worth value control coordinator, at San Diego for the seminar.

"We are not looking for peanut savings," he said. "We are looking for ways to cut from 60 to 90 per cent in unnecessary costs which do not contribute to the function of a product."

Stressing the importance of value control to all of the nation's industry, he said, "We are engaged in World War III—a war on the free enterprise system. The only way America can

(Continued on Page 2)



BIG HAUL—C. H. Hahn of GD/Convair cost reduction and Yolanda Gonzales, quality control, hold part of 650 unneeded screws, nuts, bolts, other items found stashed in two "pack rat" tool boxes.

Convair 'Pack Rats' Under Fire; Tool Boxes Due For Inspection

"Pack ratting" is coming under close observation as the year-end conservation drive at General Dynamics/Convair hits high gear this month.

R. A. Neale, director of operations, urged regular inspection of tool boxes, cabinets and work benches throughout the plant to eliminate "hoarding."

As an example of the vast amount of material kept out of productive use, C. H. Hahn, cost reduction supervisor, counted over 650 items emptied from two em-

ployee tool boxes. Total value of the cache was \$135.04!

"Many people have a natural tendency to become 'pack rats,'" Hahn admitted. "But it is a costly practice when they keep materials needed for production out of circulation and on shortage reports. The company must order additional supplies to make up for all the 'hidden' ones."

The next two weeks, Dec. 11 through Dec. 21, are set aside in the current conservation program

(Continued on Page 2)

Halaby Observer During F&R Test

Federal Aviation Agency administrator, Najeeb Halaby, flew as an observer on two Convair 990 flights in the current testing stage which opens the door for full FAA certification of the 990 as a passenger carrier.

Boarding the jet airliner at Friendship Airport in Baltimore on the plane's Flight 28 in the functional and reliability program, Halaby disembarked at Los Angeles and made the trip back again the next day, Nov. 19.

Other highlights in No. 6's experiences in F&R over the last couple of weeks was a "cold soak" at New York's Idlewild Airport. The craft was serviced and operated on the ground during cold weather. While at New York airport it also demonstrated noise abatement takeoff tech-

nique for the New York Port of Authority.

At presstime late last week the plane had passed the three-quarter mark in F&R flights proving its serviceability over actual airline routes of different lengths. The program is due to wind up within the next few days, said flight test engineers.

During its cross-country flights it had averaged almost 10 hours a day in the air.

Day after day it covered the same path from San Diego to Miami and return, touching down at Houston or Fort Worth, New Orleans, Tampa en route. Then last week, came a series of short hops alternating between San Diego and Phoenix and San Diego and Los Angeles.

It was laid up for a couple of days last week for routine cleanup of items accumulated during flight. The entire program was termed satisfactory, progressing according to schedule.

HOLIDAY SCHEDULE FOR YEAR-END SET

All General Dynamics divisions and facilities based in California and their off-site personnel will enjoy two four-day weekends during the holiday season.

Holiday schedule this year will be Dec. 25 and 26; Jan. 1 and 2.

The same dates apply to GD/Convair, GD/Electronics, including Information Technology facilities, GD/Astronautics plants at San Diego; off-site bases; and GD/Pomona.

Except for necessary security and maintenance functions, the plants will shut down for the four-day weekends on both Christmas and New Year's weeks. Work will resume as usual on Wednesdays, Dec. 27 and Jan. 3.

Tickets \$2 a Couple For Xmas Dance

Holiday spirit will get a decisive early boost this year when GD/Convair Management Club members gather for their annual Christmas dance Dec. 9 in the U. S. Grant Hotel.

Cocktail hour is slated from 8-9 p.m. with dancing following from 9 until 1 a.m.

Tickets are \$2 per couple and can be purchased at regular outlets.

Music of Mark Warne's orchestra will be featured. The affair is informal.



SEMINAR KICK-OFF—J. H. Famme, GD/Convair general manager, and H. P. Williams, value control manager, open initial session of current value control seminar (center) pointing out "Accomplishment vs. Activity" cartoon to 40 management personnel. At right, Williams; W. G. McMurry, GD/Fort Worth; B. P. Schroeder

and E. D. Heller, GD/Pomona; H. W. Rubottom, GD/Convair, check registration list with Kay Ritzinger. In shot at left, Williams and project leaders, M. R. Taylor, D. L. Macey, W. D. Lavis, C. A. Ives, examine items evaluated for cost cuts. Present seminar winds up this Friday.

Log Book Entries



TWENTY-FIVE YEARS—B. U. Santi, Dept. 140, left, B. F. Ferguson, Dept. 6, and R. W. Huckell, Dept. 31, last month joined the growing ranks of quarter century veterans at GD/Convair.

Service Emblems

CONVAIR

Service emblems due during the period Dec. 1 through Dec. 15.

Thirty-year: Dept. 31, A. E. Rominger.

Twenty-five-year: Dept. 13-1, W. B. Wimer; Dept. 135, M. M. Doerr; Dept. 292-5, H. B. Gimber.

Twenty-year: Dept. 3-3, Beth C. Hudson; Dept. 6-300, C. J. Rezek; Dept. 14-9, C. W. Leedom; Dept. 16-7, Melvin Collingwood; Dept. 31, Rene J. Collette; Engenio Villegas; Dept. 45-0, Norman Grand; Dept. 48-01, C. E. Boyd; Dept. 50-60, W. M. Parker, C. J. Rother Jr.; Dept. 92-0, H. D. Smith; Dept. 133, C. A. Harrington; Dept. 148, F. J. Vigliaturo; Dept. 160, S. S. Stearns; Dept. 192, R. W. Chambers, C. F. Lewallen; Dept. 215, M. J. Lundy; Dept. 401-7, R. G. Bell.

Fifteen-year: Dept. 6-500, W. A. Schmitz Jr.; Dept. 21-1, J. L. Heck; Dept. 25-1, R. A. Hunt; Dept. 31, A. F. Williams; Dept. 48, E. M. Alexander, William Golden; Dept. 97-0, G. O. Withem.

Dept. 115, A. W. Beckman; Dept. 123-0, R. W. Willig; Dept. 133, G. L. Carter, E. J. Ford; Dept. 137, L. O. Riggs; Dept. 145, J. D. Burt; Dept. 171-0, J. L. Deal; Dept. 180, R. A. Biesack; Dept. 192-3, M. V. Portson; Dept. 400-3, T. H. McManus; Dept. 401-4, C. C. Byrne Jr.

Ten-year: Dept. 3-5, Dorothy S. Scrivener; Dept. 6, J. O. Baird, F. N. Bergen, M. C. Curtis, Maria C. Kidder, W. N. Terry; Dept. 13-0, C. J. Sack Jr.; Dept. 15, Ray Behlman, H. O. Krumm, C. B. Robinson; Dept. 16-4, R. M. Walraven; Dept. 23-1, C. G. Farnsworth; Dept. 24-4, D. M. Butala, H. H. Hukari; Dept. 25-1, W. A. Engelke.

Dept. 31, R. L. Carr; Dept. 45-1, K. T. Matkin; Dept. 48, Kittie K. Kelly, Marilyn R. Simpson, R. J. Wick; Dept. 50, Margaret B. Clark, S. S. Sifuentes; Dept. 91-7, Hettie C. Reynolds; Dept. 95-3, E. T. McAbee; Dept. 99, A. P. Perry.

Dept. 117, Mary F. Heal; Dept. 120, Willomai J. Luttrell, M. A. Uyeji; Dept. 128, Minnie P. Green, Willie Mae Houston; Dept. 129, Mary M. Miller; Dept. 133, Travis Gooden; Dept. 134, Doris S. Webb; Dept. 136, D. J. Saldaña; Dept. 139, E. L. Weatherford; Dept. 140, C. C. Powell; Dept. 142, C. D. Bommersbach, F. J. Minikus; Dept. 145, Lee Ora A. Brothers, R. J. Street; Dept. 146, Norman Spain; Dept. 160, Barbara J. De Soto; Dept. 170-0, F. A. Ackerson; Dept. 171, T. J. Tolison Jr., J. R. Van Cleave; Dept. 180-0, O. O. Reynolds; Dept. 192-5, Lois K. Chambers, Elizabeth D. Preisler.

Dept. 215, C. A. Davies, Eleanor S. Halford, C. N. Sugiyama, L. M. Thierien, Elizabeth O. Thompson; Dept. 216, Margaret E. Cowart; Dept. 218, Margaret C. Ashcraft; Dept. 230, C. R. Drake; Dept. 292, Virginia M. Person, Ida Mae Lozinski, Florence H. Waugh; Dept. 400-7, Minoru Monji.

GD/ELECTRONICS

Ten-year: Dept. 1, H. C. Murray; Dept. 7, R. L. Kinney.

Personals

CONVAIR

I wish to express my deepest gratitude to my friends in Depts. 134 and 135 for their kindness, sympathy, and especially the generous gift of money, at the death of my wife.

Alfred Silva, Dept. 135, and children, Alfred Jr. and Rita.

* * *

I would like to express my sincere thanks to Convair friends for the messages of sympathy and beautiful flowers at the death of my husband, Thomas E. Critz.

Mel Critz, Dept. 48.

* * *

My sincere thanks to the thoughtful people at Convair, and particularly Dept. 215 personnel, for the visits, calls, cards, and gifts which helped to cheer my husband, Jacob E. Frichtel, Dept. 215, during his hospitalization. Also for the beautiful flowers, and Mass and sympathy cards sent at his passing.

Mrs. Vivian A. Frichtel

Deaths

CONVAIR

FRICHTEL—Jacob E., Dept. 215, Died Nov. 19. Survived by wife, Vivian, stepdaughter, two brothers, five sisters, eight grandchildren.

SIEBUHR—Charles J., Dept. 401-2. Died Nov. 25. Survived by wife, Bonnie, three daughters, two sons, brother.

WOOD—Edward G., Dept. 25. Died Nov. 27. Survived by wife, Lillian, daughter, two sisters, four grandchildren.

General Dynamics NEWS

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F-102 Squadrons Rank 'One-Two'

Two Pacific Air Forces F-102 squadrons are ranked "one-two" among all AF squadrons for maintaining aircraft in commission.

Gen. Emmett O'Donnell Jr., commander in chief of PACAF, in making the announcement, singled out the 68th Fighter-Interceptor Squadron at Itazuke Air Base, Japan, as top squadron in AOCF (Aircraft out of Commission for Parts) ratings.

The 68th, commanded by Lt. Col. Marvin W. Miller, has posted 551 consecutive AOCF-free days in F-102 aircraft. Convair-built interceptors went to the Japan base in March of 1960.

Second-place F-102 squadron is the 509th FIS based at Clark Air Base, Philippines, under the command of Lt. Col. Russell D. Demont. Since arrival of F-102s there a year ago, the squadron has recorded 277 consecutive AOCF-free days.

General Dynamics/Convair field service representatives at Itazuke are T. C. Larson and Carl Taylor, who was due to arrive there the first of this month to replace H. C. Hattel. Hattel is returning to the San Diego plant.

Based at Clark Air Base in support of F-102s are W. C. Butterfield and J. M. Mullen.

Beckett, Dewey, Lamb and Sharp Carry New Titles

Recent appointments at General Dynamics/Convair saw three men named to top positions in planning (Dept. 5) and one in operations planning department (Dept. 20).

L. C. Beckett is chief of change control; W. J. Dewey, chief of program control; N. W. Lamb, chief of business planning. All report to I. D. Sykes Jr., manager of planning.

Vern Sharp is chief of maintenance and construction for operations planning.

Beckett, who joined GD/Convair engineering in 1941, was senior furnishings group engineer before his recent appointment.

Dewey first joined GD/Convair Division in 1940 in engineering. He transferred to long range planning in 1956 and was named program control administrator for the division in 1959.

Lamb was in material department until 1954 when he went to long range planning as administrator.

A GD/Convair veteran with nearly 25 years' service, Sharp has held top posts in maintenance and plant engineering. He was assistant chief plant engineer for several years. He reports to R. M. Hatcher, manager of operations planning.

'PACK RATS' UNDER FIRE AT CONVAIR

(Continued from Page 1)

for a major clean-out of all surplus items. Supervisory steps are being taken to make this normal procedure at all times.

Everyone in the plant is urged to clear out files, desk drawers, tool boxes, cabinets, racks and bins and relinquish items not actually needed. These will go back into stock.

Cost reduction analysts will circulate throughout all areas to survey housecleaning progress with supervision and monitors.

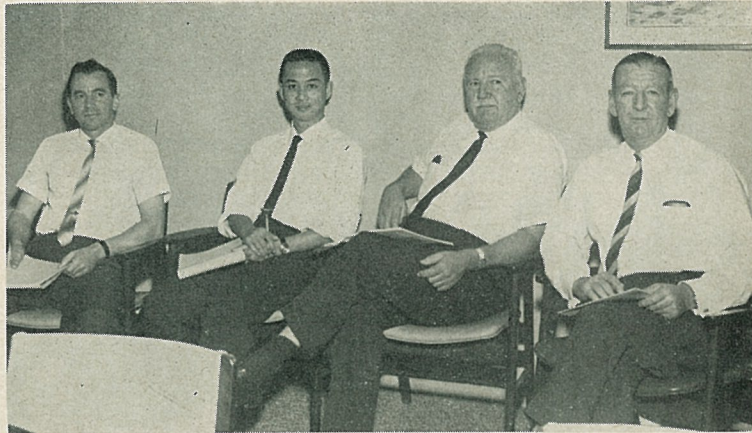
Salvage Yards Skip Holiday Weekends

Salvage yards at both GD/Convair and GD/Astronautics will be closed during the coming holiday weekends. No employees sales will be made Dec. 23 or 30 at either site.

Following schedule at both divisions will be:

GD/Convair—Dec. 9 and Jan. 6.

GD/Astro—Dec. 16 and Jan. 13.



CATHAY PACIFIC TEAM—Key men of Cathay Pacific Airways Limited at GD/Convair recently for briefing on 880-M are (from left) Roy Jones, chief supply officer; Ken Loke, engineer; Jack Gething, engineering director; Ken Steele, operations manager.

Cathay Pacific Orders 880-M For Use on Routes in Far East

Purchase of a Convair 880-M jet airliner by Cathay Pacific Airways Limited of Hong Kong was announced last week by W.

C. G. Knowles, chairman of the airline, and J. H. Famme, vice president and general manager of General Dynamics/Convair.

Delivery is scheduled in March, 1962. The Convair jet transport is scheduled to go into passenger service the following month between Hong Kong, Formosa, and Japan; and Hong Kong, Bangkok, Singapore, and Djakarta.

A group of key operations and engineering personnel was at the San Diego plant this fall for customer service maintenance training and ordering of spare parts for the Convair plane.

Cathay Pacific, an associate company of Butterfield and Swire of Hong Kong, has routes extending from its home base at Hong Kong to Tokyo, Osaka, Seoul, Taipei, and ranging as far as Calcutta, Djakarta, Bangkok, Singapore, Kuala Lumpur, Brunei in Borneo, Saigon, Rangoon, Manila, Vientiane, and Phnom Penh.

Passenger cabin of the Cathay Pacific 880-M will be divided into 24 four-across, first-class seats and 70 five-across, economy-class seats.

The Hong Kong line joins Civil Air Transport of Formosa, Japan Air Lines, Viasa of Venezuela, Swissair, Alaska Airlines, and Federal Aviation Agency in using 880-Ms.

Eight teams were formed for evaluation of actual company projects under four leaders: Ives (Dept. 23); W. D. Lavis (Dept. 129); Macey (Dept. 45); M. R. Taylor (Dept. 6).

Projects and teams are: No. 1, SATS MATS—T. L. Heid (Dept. 6); G. E. Nuss (Dept. 400); N. P. Pearson (Dept. 200); F. V. Anderson (Dept. 3); L. F. Tubbs (Dept. 45). Project leader, Ives.

No. 2, Packaging—E. W. Avlon (Dept. 192); J. B. Henn (Dept. 13); O. L. Hunley (Dept. 400); W. H. Schaefer (Dept. 6); H. E. Wolfe (Dept. 15). Project leader, Lavis.

No. 3, Inter-Trim Installation—J. E. Blain (Dept. 34); J. J. Ireland (Dept. 8); S. W. Swenson (Dept. 6); C. L. Thompson (Dept. 401); G. H. Wilson (Dept. 140). Project leader, Macey.

No. 4, Leading Edge Assembly Tools—K. C. Atkin (Dept. 6); J. T. Berthelet (Dept. 8); G. E. Briggs (Dept. 48); R. D. Marks (Dept. 12); A. M. Van Horne (Dept. 400). Project leader, Ives.

No. 5, C-141 Skin Stringer—R. L. Benson (Dept. 6); C. F. Blair (Dept. 30); R. J. Campbell (Dept. 34); H. G. Cooper (Dept. 400); L. E. Woll (Dept. 3). Project leader, Taylor.

No. 6, Asymmetry Switch—G. J. Bartolomei (Dept. 23); R. E. Bechtol (Dept. 20); F. L. Chamberlin (Dept. 401); J. V. DiMatteo (Dept. 45); R. J. Schulte (Dept. 6). Project leader, Taylor.

No. 7, Krueger Leading Edge—W. H. Goggin (Dept. 3); J. P. Lowery (Dept. 34); B. T. McMicken (Dept. 200); A. M. Walden (Dept. 400); K. E. Ward (Dept. 6). Project leader, Macey.

No. 8, Electrical Anti-Ice Leading Edge—E. W. Gildersleeve (Dept. 45); C. H. Hahn (Dept. 8); C. L. Hibert (Dept. 6); L. W. Stamper (Dept. 129); G. E. Williams (Dept. 400). Project leader, Lavis.

Club Proposing 'Clear Language' Self-Help Program

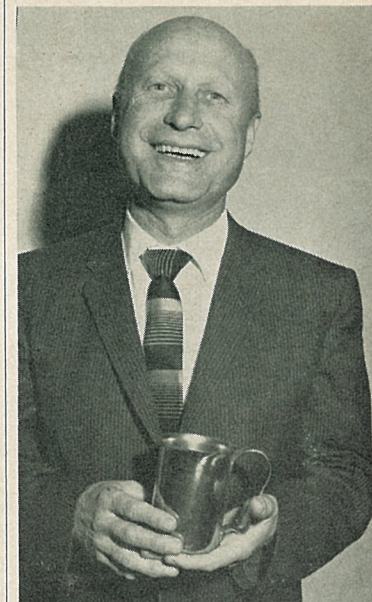
A GD/Convair Management Club "self-help" program aimed at developing clear, crisp, clean-cut language has been announced by Roy Dill, president.

Under supervision of M. L. Sweeney, club education committee chairman, instruction is being offered to all GD/Convair employees at a reduced rate of \$16.80 per subscription.

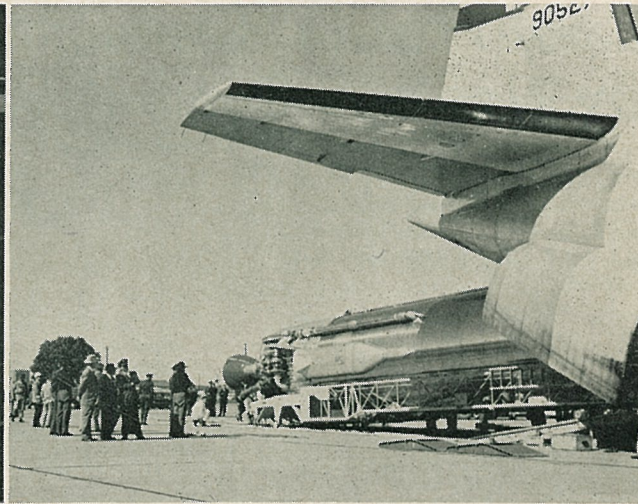
"This program is different in that instruction is presented in a series of 48 reading exercises of four to six pages and includes self-administered tests," Sweeney said.

"Instruction does not involve class attendance or written assignments."

Subscriptions must be turned in by Dec. 22.



MUG AND MACS—In top photo is Jack Swank, CRA president, who received Management Club's "Mug of the Month" in November. Below are Mattie Ross, Dept. 16 assistant supervisor, first woman to receive MacSave-it award, and Carl Uhl, Dept. 160 general foreman, who also qualified for MacSave-it.



GREETINGS—Arrival of first "F" series Atlas at Lincoln AFB was occasion for festivities. At left are Col. T. G. Carbin, USAF; Col. C. G. Sanders, Nebraska Highway Patrol; E. B. Newton, GD/Astro operations manager; Maj. Gen. L. H. Welch, Nebraska National Guard; J. Carroll, Lincoln police chief; Lt. Col. W. Disanna, deputy base commander; Col. V. L. Hastings, SATAF commander; Capt. D. Casey,

Nebraska State Highway Patrol; D. Bowen, Lincoln mayor; Col. E. P. Denton, commander, 551st SMS, in front of arriving "bird." Center photo was during morning coffee break hosted by Astro including Col. Hastings, Maj. Gen. Welch, Newton, Col. G. R. Buckey, deputy division commander for materiel, and Col. Sanders. At right guests watch as Atlas is gently removed from C-133B transport.

New Electroforming Machine Offered by General Atomic

Commercial availability of the first electromagnetic metal-forming machine for industrial use was announced last week by the General Atomic Division in San Diego.

"Magneform," the new metal-working tool, employs lightning-fast bursts of electromagnetic force to assemble, attach and shape metals quickly.

Magneform applies a powerful magnetic field against a work piece of metal in pulses of 10 to 20 millionths of a second, creating pressures ranging up to more than 50,000 pounds per sq. in.

These giant pressures can be used to collapse, shrink or compress tubing, to attach terminal connections onto rope, steel, or coaxial cables, or to swage firmly together sections of telescoping tubing.

In other applications, the magnetic pressure will expand tubing to form a tight-fitting bearing, hub or bushing. Since it is never necessary to bring the work piece into physical contact with the

coil producing the magnetic field, Magneform eliminates scratching, marring and other surface damage.

Easily interchangeable coils make Magneform highly versatile. Quick substitutions of coils by the operator permits a variety of successive operations—including swaging, expanding, forming or shearing metals, dimpling, blanking, embossing or coining.

The compact Magneform is housed in a small console, about 4 feet by 2 feet by 3 feet high, and uses a conventional 220-volt, 60-cycle power source. Cylindrical coils up to six inches long and up to six inches in diameter and flat coils with diameters up to one foot have been used so far in industrial applications. Larger coils can be made.

The machines are available to industrial users under lease at approximately \$6,000 a year, including maintenance service.

Magneform grew out of experience gained by General Atomic in its controlled fusion research.

'Dynamic America' A Gift Suggestion

General Dynamics employees were reminded this week that copies of "Dynamic America" will make good Christmas presents.

A limited number of the elaborately illustrated volume continue to be available at employee services outlets at all divisions. Although the book store price is \$20, a special rate of \$7.50 per copy has been offered to employees.

"Dynamic America" profiles the history of General Dynamics in relation to the nation's industrial progress. More than half of the volume's 1,000 illustrations are in color.

Breakthrough Achieved In Metal Joining For Future Space Vehicles

A breakthrough which may prove of paramount importance in construction of space vehicles of the future has been achieved by a group of General Dynamics researchers.

Sections of tungsten have been joined successfully at low temperatures in the materials laboratory at General Dynamics/Convair. The feasibility project, originated by GD/Astronautics applied manufacturing research and process development, (Dept. 290),

stretched over a six-month period of experimentation to result in, what may be, the first successful attempt of its kind.

"Such low-temperature joining of a refractory metal (metal of high strength at high temperature) has, to our knowledge, never been done before," said L. B. Ziffrin, Astro senior manufacturing development engineer, who began and directed the project.

"All of the metals which will be used to build high-speed craft and missiles to withstand the extremely high temperatures generated by fantastically high speeds and stresses in outer space, have, by their very nature, extremely high melting points (i.e., melting point of tungsten is 6,170 degrees F.)," explained E. E. Keller of materials lab. "When sections of such metals are joined at fusion point, there is great risk of damage to the metal."

"A method of low-temperature joining, or low in comparison with the metal's melting point, had to be found to prevent recrystallization of the metal and to eliminate buildup of thermal stresses which cause the metal to break or wrinkle."

Keller, who was in charge of developing experimental apparatus and procedures, said that the method finally evolved after months of research, centers around use of concentrated induction heating to 1,100 degrees F.

Air is evacuated from the test chamber in which tungsten sections are clamped; a mixture of hydrogen and tungsten hexafluoride in gaseous form is directed through a nozzle to deposit the tungsten, reduced to metal by the concentrated heat, on to the joint.

Dr. V. A. Favati, Astro senior manufacturing development engineer, was coordinator; Dr. O. E. Myers of GD Scientific Research, consultant.

Horne Pledges Strong Effort To Push Electronics Business

A concerted effort to expand General Dynamics/Electronics business in military subsystems and systems, and in industrial electronics is under way, President Charles F. Horne reported to his supervisory staff during a meeting at the Electronics Center in Rochester recently.

"We are seeking business," he said, "that requires competent engineering and high quality workmanship which our people can provide. The quality of our products has been demonstrated again and again, and now we must get the business that will continue to make use of our skillful people."

Since General Dynamics/Electronics is seeking military business, he said, the division must be organized to work with the government.

By entering the industrial electronics business, Horne said, the division will have more flexibility in the use of personnel.

Data processing, the use of high-energy acoustical power, school sound systems, intercom and public address systems are a few fields he mentioned meriting more attention.

★ ★ ★

Executive appointments, many of them new only in titles and responsibilities, were made this week for General Dynamics/Electronics in Rochester by Charles F. Horne, president.

Reporting directly to Horne will be:

Sidney R. Curtis, a veteran of 37 years with GD/E and its predecessor, Stromberg-Carlson, as vice president for plans and programs.

Dr. Nisson A. Finkelstein, director of research at GD/E since 1959, as vice president for research and engineering.

Arthur J. Hatch Jr. in the same position he has held for the past two years, as vice president for commercial products,

Roy W. Jones, former director of manufacturing, and having 20 years of experience in production in the Telecommunication Division, as director of operations.

Robert D. Gray, with seven years experience in engineering and program direction, as director of quality control.

Arthur E. Linkins, in the same position as director of contracts to which he came in early 1960.

Frederick L. Gagnon, with 13 years' experience as an electronics engineer, project director and program manager, as program director.

Wayne K. Bright, former controller of the Military Products Division, as controller.

Kenneth R. Harkins, a member of GD/E legal staff for the past 18 months, as division counsel.

David S. Cook, with a record of 20 years in advertising, sales promotion and public relations with GD/E and Stromberg-Carlson, as assistant to general manager.

Robert J. Gilson, former general manager of Military Products Division, as special consultant to the president and general manager.



MAGNETIC ASSEMBLER—A new machine which can assemble, attach and shape metals using "gravity" is now in production and available on lease from General Atomic, division of General Dynamics. Called Magneform, machine is first to use magnetic field for energy in part formation and assembly.

Delta Expands 880 Jet Service SF to Jamaica and Caracas

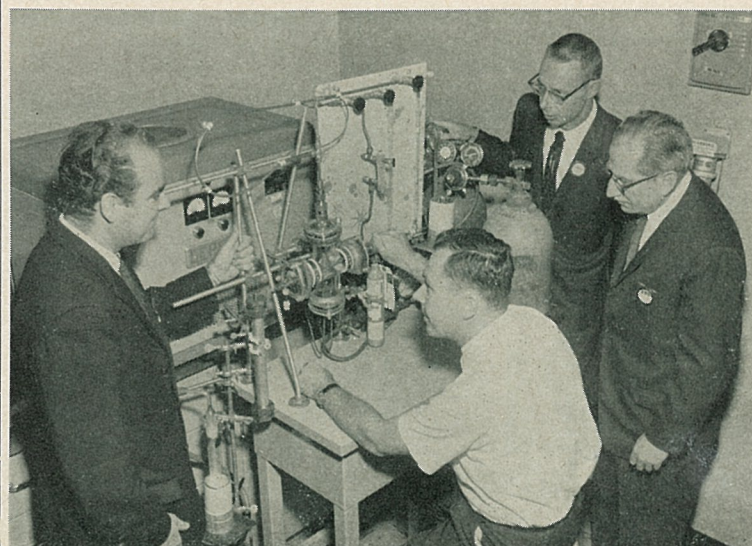
Delta Air Lines expanded its Convair 880 jetliner service to South America this month.

Weekly round-trip 880 service was inaugurated Dec. 1 between San Francisco and Caracas, Venezuela, with intermediate stops at Dallas, New Orleans, and Montego Bay, Jamaica.

T. M. Miller, Delta vice president-traffic and sales, said the 88-passenger Convair 880, offering first class and tourist accommodations, departs San Francisco each Friday at 1:05 a.m. PST,

Dallas at 7 a.m. CST, New Orleans at 9:30 a.m. CST, reaches Montego Bay at 12:50 p.m. EST. The flight departs at 1:20 p.m. and arrives in Caracas at 3:39 p.m. EST.

On the return trip the 880 jet leaves Caracas each Saturday at 1:20 p.m., departs Montego Bay at 3:25 p.m. EST, arrives in New Orleans at 5 p.m. CST. Its departure for San Francisco is 6:10 p.m. CST, arriving in Dallas at 7:17 p.m. CST and the bay city at 9:25 p.m. PST.



SUCCESSFUL—General Dynamics team responsible for scientific achievement in joining refractory metals gathers around test setup. From left, Dr. V. A. Favati, Astro Dept. 290; E. E. Keller, materials lab located at GD/Convair (seated); Dr. Orlo E. Myers, GD Scientific Research; Lou Ziffrin, Astro Dept. 290.

Early Missile Research Sparked By Need to Combat Suicide Raids

(Following is No. 73 in continuing history of General Dynamics products, completing account of development of delta wing that led to F-102, F-106 and B-58 aircraft.)

Next to delta-winged aircraft, Convair's most important military production by the mid-50s was missiles.

Derived from early research at Vultee Field, Convair's first venture into the field of guided missile stemmed from a Navy project to find an answer to Japanese "kamikaze" suicide plane tactics.

Studies made in 1944 pointed to an ideal anti-aircraft weapon which would be capable of homing on piloted aircraft. The Bu-

reau of Ordnance early in 1945 enlisted the help of the Applied Physics Laboratory of Johns Hopkins University.

In an early application of what is now called the "weapon system concept," BuOrd assigned overall technical direction to APL (which had made its mark in development of the proximity fuse). APL selected associate contractors in many fields: pure research, electronics, explosives and the like. Convair was picked to carry principal airframe responsibility, and had a collateral role in the ramjet burner development.

Vultee Field worked on two types of airframe: a controlled test vehicle (CTV) of a subsonic speed for testing stabilization and controls tied to a Bendix beam follower, and a supersonic vehicle (STV) for exploring the aerodynamics of faster-than-sound flight. Both were powered by solid-fuel rocket motors.

CTV (called Gnat) progressed swiftly. Engineering began releasing orders to the shop the first week in June, 1945, and the initial unit was shipped to APL June 29.

Successful firing (meaning it remained airborne over its expected trajectory) followed on July 2. Gnat's velocity was 800 ft./sec. with an endurance of 13 seconds. By June, 1946, Gnat followed a radar beam (slow). Testing was discontinued before all of approximately 90 CTVs had been expended.

Development of STV (called Snoot) came along more slowly. Information was sent for calculating supersonic loads and drag.

Dr. A. G. Mitchell of APL participated in conferences at Downey in July, 1945, where C. R. Irvine, Vultee Field chief engineer, and his staff roughed out the configuration "on the back of an envelope."

Analysis of aerodynamic data was completed in August and the first missile was sent to APL in October. It was fired at Island Beach, N. J., with results typical of the art in 1945: "The missile tumbled immediately after launching and hit the ground 200 yards from the launching site . . . exact cause has not been determined."

After minor modification the second missile was fired with what might be termed 100 per cent improvement—it travelled some 400 yards before touching earth. Missile No. 3 was launched with moderate success in January, 1946, at the new Naval Ordnance Test Station near Inyokern, Calif., and by March a "fully successful" firing heartened engineers.

Slowly, painstaking development continued into the summer of 1948; through some STV-1s through the STV-2 series (first fired in August, 1947) and the early STV-3s (first fired April 8, 1948).

In a spectacular breakthrough, the contracting team solved the aerodynamic and control problems so well that BuOrd and APL decided to convert STV-3 into a tactical weapon without waiting for perfection of the ramjet motor. Thus, Terrier was born.

Flight Rating Tests Completed On Centaur's Rocket Engines

Completion of preliminary flight rating tests on this nation's first liquid hydrogen rocket engine, which will power the General Dynamics/Astronautics Centaur launch vehicle, has been announced by the National Aeronautics and Space Administration (NASA).

The engine, the RL-10 (formerly called XLR-115), was put through 20 captive firings in just five days. Conducting the test was the engine developer, Pratt and Whitney Division, United

Aircraft Corp.

All firings were conducted under simulated space conditions with the engine consistently producing its rated 15,000 pounds of thrust.

Two RL-10s will be used in powering the Astronautics designed and produced Centaur space vehicle. NASA indicated Centaur is slated for its first flight test "in the next few months."

Development of this engine dates back to October, 1958. Since that time 700 firings were held for an accumulated time in excess of 60,000 seconds, NASA indicated. Recently, firings were accelerated to about 70 per month.

Twelve RL-10s have been delivered to the High Thrust Test Area, Edwards RS, to NASA's Lewis Research Center, to GD/Astronautics and to Douglas Aircraft for further testing prior to launching both Centaur and Saturn space vehicles from Cape Canaveral, Fla.

Fueled by liquid hydrogen, (boiling point is minus 423° F.) the engine is designed to provide a capability of multiple restarts in space with "coast" periods of many hours between firings.

MacBride and Loomis Leave Gen. Dynamics

Resignations of two General Dynamics executives—C. Rhoades MacBride, executive vice president, Western Group, and Robert C. Loomis, president of GD/Convair — were disclosed last week.

Loomis has accepted a position as president and chief executive officer of American Electronics, Inc. of Fullerton, Calif. He had held executive posts at Pomona and San Diego for 14 years.

MacBride came to San Diego from New York early this year. He had been with General Dynamics since 1958.

Seneca as 'Deepest Lake' Challenged; Crater in Oregon Merits the Title

Following is a letter by a former General Dynamics/Convair and Astronautics employee who is both a close reader of General

Dynamics NEWS and a student of geography.

"Dear Editor,
"In reference to your story in the Nov. 8 issue, you identified Lake Seneca in the 'GD/Electronics Barge will do ASW Research,' story as 'by far the deepest of any U.S. lake other than the Great Lakes.'

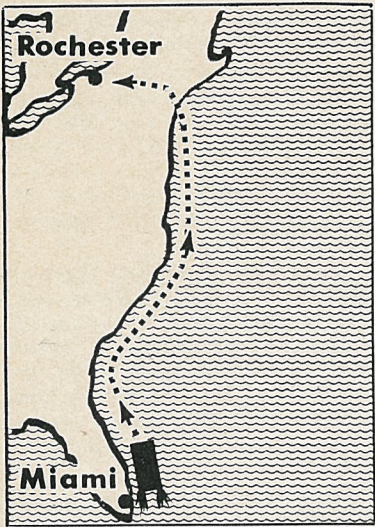
"You are way off.
"I'm positive Lake Chelan, Washington is 2,100 ft. deep, Crater Lake, Oregon, 2,200 ft. deep and Lake Tahoe, California, about 1,200 ft. in depth.

"Check this and I'm sure you will find all these bodies of water are deeper than Lake Seneca.

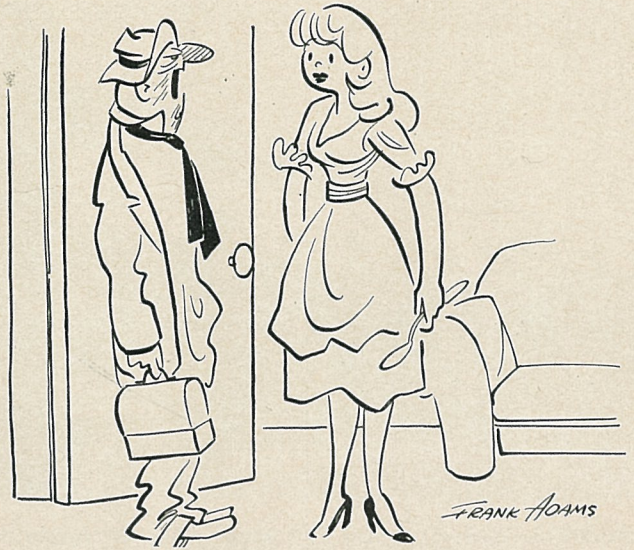
Garland Mitchell
San Clemente, California

"P. S.: Seneca may be the only lake accessible to this barge."

Editor's Note: You are right. Not only Chelan (1,000-1,500 ft.), Crater (1,996 ft.) and Tahoe (1,650 ft.) qualify as deeper, but the Pend Oreille, Idaho, (1,158 ft.) would also join this group. Qualifying phrase "that has direct access to Atlantic Ocean" was omitted from original story.



ROUTE — Sketch shows route taken from Florida to Seneca Lake, near Rochester, N.Y. (via Hudson River) by barge which GD/Electronics will use in anti-submarine warfare research.



"All of us in the back seat lost control of the car . . . the driver stopped at every bar on the way home . . ."

Contract For Unit of Mauler Awarded to Canadian Concern

A contract for \$1.7 million for production development of an infrared acquisition unit for the Mauler missile system has been awarded to a Canadian firm, according to a recent announcement in Washington, D. C.

The United States and Canadian governments jointly announced award of the contract—the first cooperative development of a missile system between the two governments—to DeHaviland Aircraft Corporation of Canada, Ltd., Downsview, Ontario. The contract was awarded through the Canadian Department of Defense.

Mauler, the U. S. Army's newest air defense missile system under development, is designed to destroy enemy supersonic aircraft, short-range ballistic missiles and rockets in a battlefield area.

The Army Rocket and Guided Missile Agency, an element of the Army Ordnance Missile Command at Redstone Arsenal, Ala., has overall charge of Mauler

development and will provide technical supervision.

Technical guidance will also be furnished to DeHaviland by General Dynamics/Pomona, prime contractor for the Mauler system.

Robertson Assigned To Heller Survey

Three temporary executive assignments were announced at General Dynamics/Astronautics last week by J. R. Dempsey, president.

George M. Robertson, director of management systems, is on special assignment to work with Robert Heller and Associates, management consultants, on recommendations for improving Astro operating methods. Meanwhile, Paul D. Ferrara, chief engineer-administration, becomes acting director of management systems, and George E. Putness, formerly GD/Convair assistant chief engineer-administration, becomes acting chief engineer-administration.

Advanced Products Dept. Expanded at San Diego

Rapidly expanding Advanced Products Department of General Dynamics at San Diego now boasts 176,000 sq. ft. in total area after recent completion of a 7,800-sq.-ft. wing for the mechanical section.

Consolidation of Advanced Products' two sections, chemical and mechanical, was facilitated when the original two-story building opened last year.

R. G. Monsees, general manager, said "the versatile facility promotes the necessary division of activity within the department, essential for safer and more lucrative research."

Housing for mechanical (formerly known as Dynapak) section's engineering, sales and administration has been provided by the low-flung, rambling wing.

Installation of the "701" telephone switchboard has directly connected Advanced Products with GD/Convair. In operation less than a month, the "701" has a capacity of 2,000 outlets.

Concurrently, the second floor

of the chemical section is being converted to laboratories.

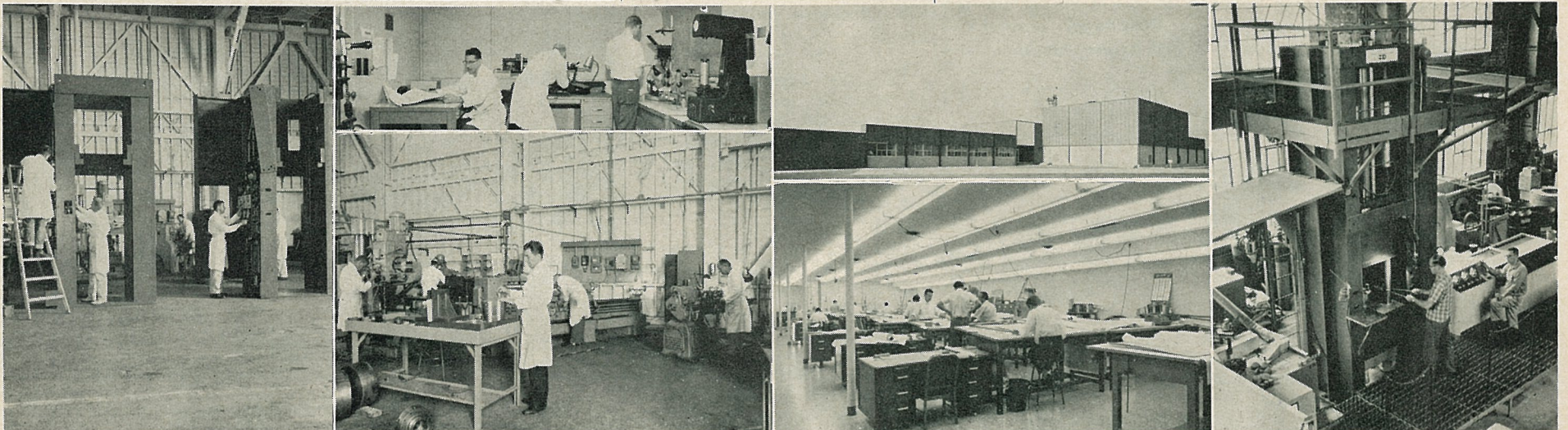
Separated from mechanical section by a firewall, chemical section's total floor area, including pilot plant, is 7,936 sq. ft.

Located on GD/Convair SD ramp, Advanced Products will receive a decisive experimental boost when a one-million pound capacity testing pad, under construction at GD/Astronautics, is completed.

Included in Advanced Products' rehabilitation activity was the recent renovation of Bldg. 37, mechanical section's parts, tooling and assembling area.

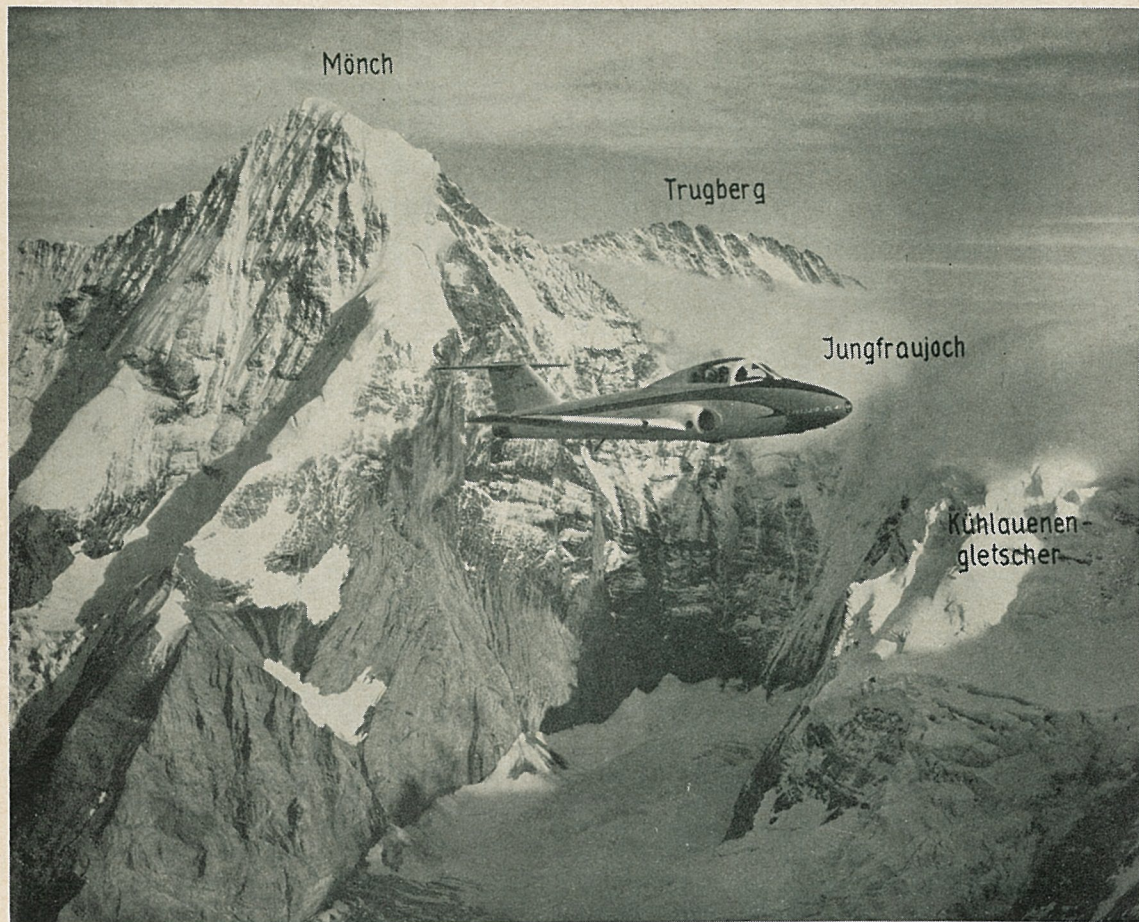
Home of "Dynapak," high-energy rate forging machine, and the new "AP-Resin-XHU," a multi-purpose chemical solid, Advanced Products employs 150.

"As the only producer of a high-energy rate machine which can point to actual production capability and with the expected marketing potential of "AP-Resin-XHU," the potential here is unlimited," Monsees said.

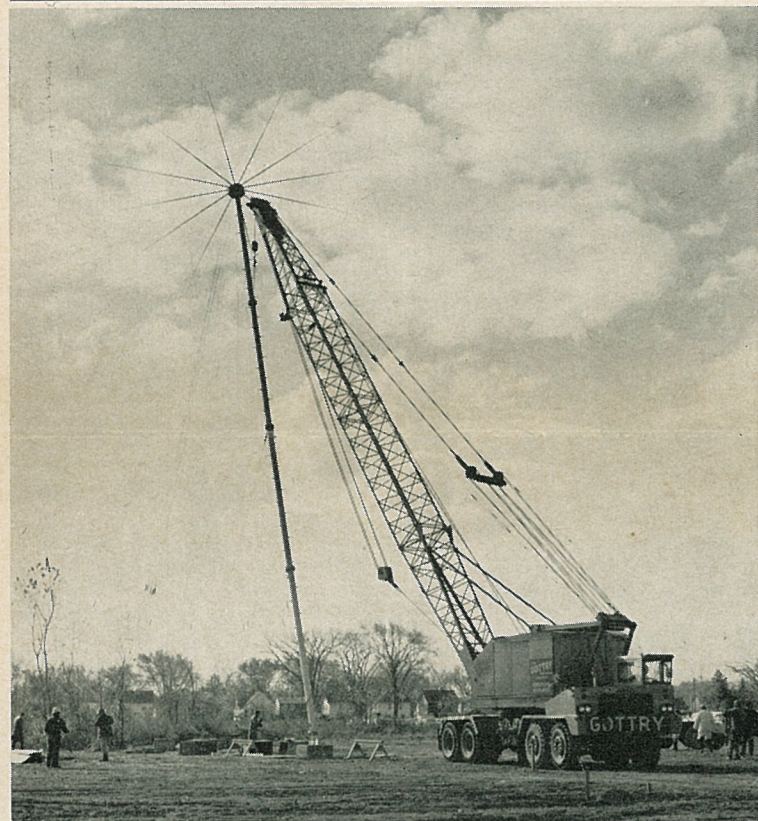


EXPANSION—General Dynamics' Advanced Products Department at San Diego, which recently completed new wing, is shown above. Expanded facility is divided between mechanical and chemical sections. Largest vertical Dynapak machine in

production (right) is pictured at American Brake Shoe Co. Engineering department in new wing (bottom right), Dynapak prototype lab (bottom left), metallurgical laboratory (top left) and Dynapak assembly (far left) are among facilities.



OVER THE ALPS—Canadair's trim CL-41, jet trainer, is shown cruising above Alps while on recent demonstration visit to Europe. Photo was shot from Swiss Air Force plane. Royal Canadian Air Force has ordered 190 of these ships as most modern trainer on market.



GOING UP—An 80-foot-high mast is erected at GD/Electronics, Rochester for testing military communications equipment being built for U. S. Air Force.



TERRIER AND "HOME"—In upper photo is General Dynamics/Pomona plant at Pomona, Calif., where Terrier and Tartar missiles are built. Below, Terrier takes off during desert maneuvers of U.S. Marine Corps' First Medium Anti-aircraft Missile Battalion. Approximately 6,500 are employed at Pomona plant. Known as Naval Weapons Industrial Reserve Plant, it is operated by Dynamics for Bureau of Naval Weapons.

Avoid Rush Mail Hours

In an effort to better distribute the mail handling burden during the day, U. S. Post Office authorities throughout the country are requesting that users avoid the rush period of 4:30 to 7 p.m. for all but the most important mail.

"About 70 per cent of the mail reaches the post office between those hours," R. I. Morse, office services manager at the San Diego corporate offices, reported. "Post offices are endeavoring to shift part of this load to the morning hours to more efficiently use their staffs."

Morse urged General Dynamics mail users, particularly during the Christmas season, to mail as much as possible during the forenoon. Their mail will be moved faster and more efficiently, he said. The appeal is part of steps taken by Dynamics to cooperate in the "Nation-wide Improved Mail Service" program of the U. S. Post Office.

Commander Named To Bomb Squadron

Lt. Col. Joseph Schreiber has been named commander of the 63rd Bombardment Squadron at Carswell AFB. The 63rd is recognized as the world's first tactical supersonic bombardment squadron equipped with the Mach 2 B-58 Hustler. Dynamics builds the B-58 at Fort Worth.

High Speed Teletype System Links All Dynamics Divisions

General Dynamics/Astronautics Division's private wire teletype communication network will merge next month with the General Dynamics Corporate system, resulting in a considerable overall financial saving as well as increased efficiency of service to all Dynamics divisions.

The Astro network was created originally for logistics support to Atlas missile off-site bases under construction in far-distant parts of the country. The same, or improved, logistics service will continue via the expanded system.

R. E. Bennis, corporate coordinator of wire communications, reported that as the two systems are identical Western Union Telegraph Co. type 111-B installations, virtually no difficulty is anticipated in the consolidation.

There will be three switching centers, located in New York, Fort Worth, and San Diego. Fanning out from these are direct lines to key points, such as Rochester, Montreal, Washington, Chicago, Atlanta, St. Louis, and Wichita, Nashville, Dayton, Albuquerque, and Los Angeles.

Messages to points not served by direct lines will go to the closest switching center and then be refiled via regular Western Union facilities, at a cost substantially less than a commercial telegram.

Consolidation of the systems is expected to account for approximately \$100,000 a year in sav-

ings, much of it by elimination of parallel service.

Actual message-sending procedures for individuals will continue much as in the past. For example, messages will go by teleprinter from Astronautics home plant in San Diego to the switching center in the basement of Bldg. 19 at San Diego, and thence out over the network to destination. Once the message is "cut" on tape at the originating teleprinter, transmission becomes almost immediate.

The main objective in all three switching centers is to maintain a "no backlog condition." That is, messages are relayed through the centers to destination points with an absolute minimum of delay.

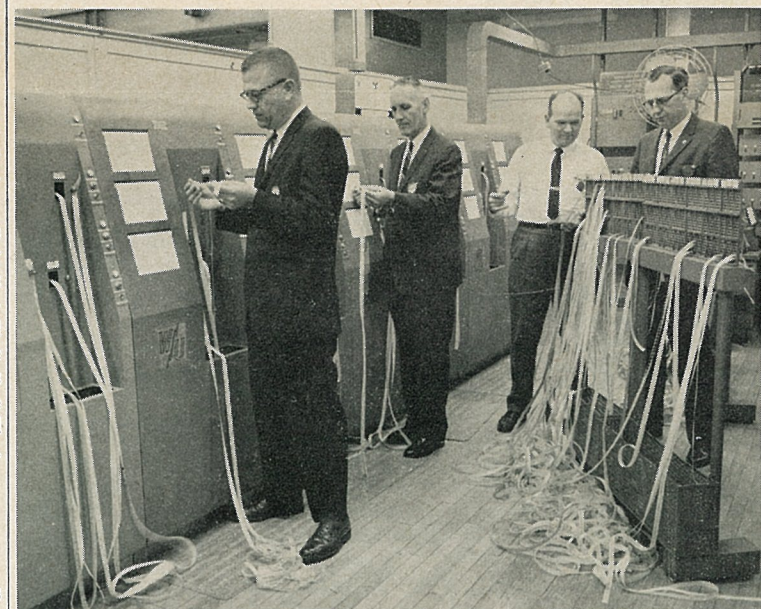
The system totally involves about 16,000 miles of leased lines. Main trunk lines process messages in two directions simultaneously at 100 words a minute.

JOHNSON NAMED TO AIA BOARD

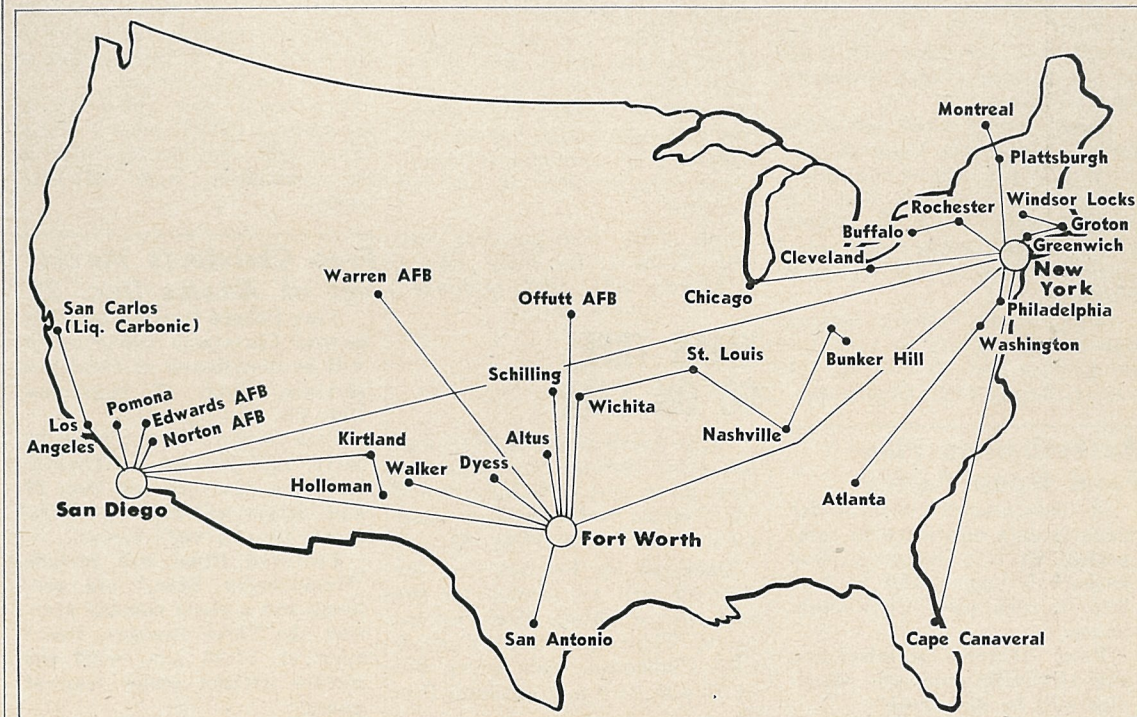
Earl D. Johnson, president of General Dynamics Corporation, has been named to the board of governors of Aerospace Industries Association for 1962.

Johnson joins a select group of administrators of the nation's major manufacturers of airplanes and aerospace vehicles forming the governing body of the association.

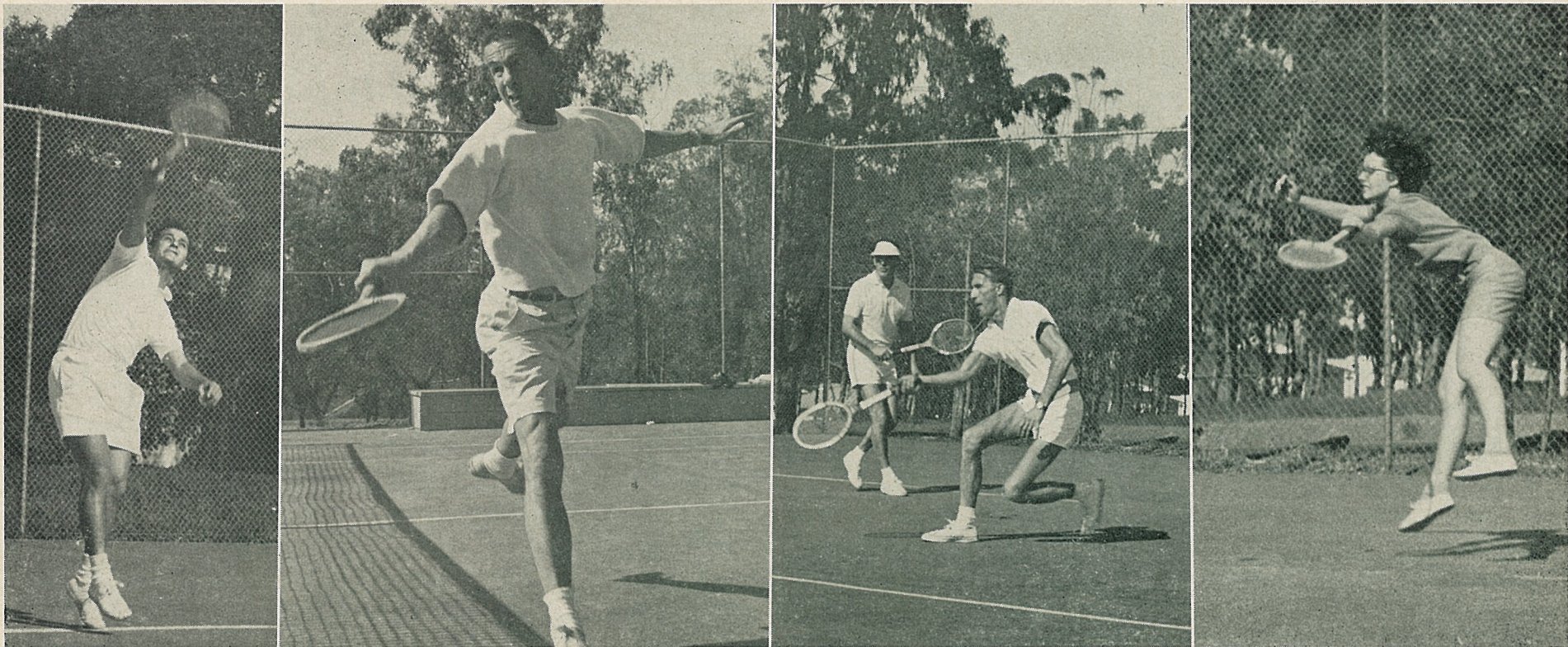
August C. Esenwein, formerly of General Dynamics, was elected president for the coming year.



TICKER TAPE—Inspecting GD/Astronautics' switching center in San Diego are, from left, R. E. Bennis, corporate coordinator of wire communications; R. I. Morse, office services manager at San Diego corporate offices; W. W. Welton Jr., GD/Astro assistant supervisor, product support; and K. R. Aiken, GD/Astro logistics support manager.



FAST AND FAR—Map illustrates General Dynamics Corporation's communications network as it will be when merged with GD/Astronautics Division's system. New York switching center will serve 20 stations, Fort Worth 25 and San Diego 40.



—Pictures by Ron Ainsworth.

SMASH—Fred Balata (left) serves in CRA tennis tournament at San Diego played at Morley Field Nov. 18. Balata joined lunging Dean Whitney (second from left) as two of four turkey winners. Barney Campbell and Dale Pline (second from

right) are caught in doubles volley and Marilyn Beyrer (right) goes "airborne" to return a cross-court. Tourney was first of reactivated CRA Tennis Club and served as warm-up for doubles tourney slated between GD/Convair and GD/Astro Dec. 16.

GD/Convair, Astro Clash In Doubles Tennis Match

Inter-divisional sports rivalry will hit a pitch when eight doubles teams from GD/Convair and GD/Astro clash in a CRA sponsored invitational tennis tourney Dec. 16.

This will be first tennis competition staged between the two cross-town divisions.

Panel Discusses 'Woman' Topic

Dynamic Toastmasters, their ladies, and Delta Toastmistresses were hosted by Maj. Ken Samples, USMCR, at the Admiral Kidd Officers' Club last week.

"Woman," was the controversial subject chosen for theme of the Nov. 30 dinner meeting. A selected panel discussed "interesting and unusual aspects of man's indispensable dilemma," reported Samples, past president of the Dynamic group.

John Belanick of Astronautics chaired the special session as current president.

Regular dinner and speaking meetings are scheduled each Thursday by the General Dynamics Toastmasters club. The organization is open to all GD men based in the San Diego area.

Information is available from Charles Willits, educational vice president, ext. 2265, Plant 1; Belanick, ext. 2143, Astro main plant; or Samples, ext. 2223, Plant 1.

Hines Snags Bass, Wins Angler's Prize

Guy Hines, GD/Convair retiree, snagged a 6-lb., 7-oz. large mouth bass and along with it \$10 as the Fishing Club's November contest winner.

Hines' catch, taken above Imperial Dam on the Colorado River, was 76 per cent of the record.

Honorable mention, but "no dough" went to J. B. Harter (Dept. 6) for landing a 250-pound black sea bass off the Coronado Islands.

In other club activity, nomination of officers will be sought at the group's Dec. 19 meeting, 7:30 p.m., Gillespie Field Clubhouse.

Basketballers Plan Final Hoop Parley

A "last chance" meeting for departments interested in competing in GD/Convair's shop basketball league will be held Dec. 7, 4:45 p.m., CRA Clubhouse.

Pete Beyrer, commissioner, said eligibility rules and schedules will be discussed.

All registered team representatives as well as interested persons should attend this meeting, Beyrer urged.

Slated for Morley Field, "B" bracket teams will get under way at 9 a.m. and "A's" at 11 a.m.

Pete Beyrer, CRA spokesman, said trophies will be awarded winners and runners-up in both brackets. Tourney balls will be provided and there is no entry fee, Beyrer added.

Stan Griffin will lead GD/Convair forces while Ben Cendali, ARA commissioner, will head GD/Astro.

As "prep" for the impending battle, CRA tennis enthusiasts staged a "hodgepodge" tourney Nov. 18.

With chances of victory left to "lady luck," Fred Balata, Dean Whitney, John Struthers and E. Rothe collected turkeys by winning most games in a best of 20 competition.

Additional information concerning the Dec. 16 tourney can be obtained by calling Beyrer, GD/Convair, ext. 1245, Plant 1.

CRA Campster Kits Waiting For Builders

Trailer-campster kits for "do-it-yourself" outdoorsmen and fishermen are available to GD/Convair employees at reduced price, Bob Menzie, Fishing Club commissioner, said.

The kits, priced at \$40, may be purchased at Gillespie Field from Frank Marchant. Assembly frame at the boathouse may be used for forming, said Menzie.

"More than 50 GD/Convair people already have used the frame to build campsters," Menzie said. The \$40 for kits includes charge for facilities.

Fiber glass can be purchased at Olsen and Johns Ship Chandlers, off Harbor Drive on Tuna Lane. Basic amount for a campster costs \$30. Each builder then completes his campster with individual interior trim of his own choosing.

Call CRA headquarters, ext. 1245, Plant 1, for more details, or Menzie, AT-1-8247, evenings.

XMAS TREES GO ON SALE

Eight hundred prime Washington state farm-grown Christmas trees go on sale to GD/Astro and GD/Convair employees at bargain rates Friday (Dec. 8).

Operated by Prophet Co., the tree lot will be located on the east side of Pacific Highway opposite Plant 1 outside Convair CRA Clubhouse. Sale hours will be 10 a.m. to 9 p.m. through Dec. 20.

Prices range from 79 cents to \$4.25 on regular-sized trees. Larger trees will be available at slightly higher prices.

Camera Club to Tap Year's Top Photos

Winners of the Camera Club's "Print and Slide of the Year" contest will be selected Dec. 11, Photo Arts Bldg., 7:30 p.m.

Ron Ainsworth, club spokesman, urged all quarterly contest winners to have their entries in for final judging.

In other club activity, Allen Henny (Dept. 6) was elected president; Ainsworth, vice president; and Howard Harvey, secretary-treasurer.

CRA Coin Club Sets Election

New officers for CRA Coin Club will be elected at the Dec. 21 meeting, 7:30 p.m., in the cafeteria executive dining room.

Nominations will be submitted by the nominating committee for members' approval. However, other nominations will be accepted from the floor, A. L. Baber, president, said.

A gift exchange will follow the business session. Members are asked to bring numismatic gifts valued at \$1. Usual trading session and door prize drawing are on the program.

Ivan B. Knickerbocker, GD/Convair retiree, won the best-of-show trophy with his U. S. gold coin collection at the fourth quarterly display Nov. 16.

Anthony Lamppa (Dept. 6) won the 1960 proof set given as door prize and George Johnson (Dept. 401) was lucky winner of the turkey drawing.

HENDERSON SHIFTS TO ASTRO POST

H. L. Anderson, former manager of quality control for GD/Electronics' military products division, has joined GD/Astro as assistant to R. E. Steele, chief of off-site quality control.

Henderson was chief of inspection at GD/Convair's Palm-dale flight test center prior to his association with GD/Electronics.

Free Christmas Movie Set at Adams Dec. 21

Free tickets to GD/Convair's annual Christmas movie party will be distributed at employee services, Bldg. 32, beginning Dec. 11.

Pete Beyrer, CRA representative, said the Adams Theater has been reserved for Dec. 21 and tickets will be on a "first-come, first-served" basis.

Featured films will include "Huckleberry Finn," six cartoons and a short comedy starring the Three Stooges. Doors open at 11:30 a.m. with the picture getting under way at noon.

"Employees should not take tickets unless they are absolutely sure of using them," Beyrer said.

CRA Sports Car Drivers Plan Meeting To Discuss Pre-Christmas Cavalcade

Fresh from a highly successful "Field Day '61" the GD/Convair Sports Car Club will meet tonight (Dec. 6) to discuss plans for a pre-Christmas cavalcade.

Ken Miles, well-known sports car race driver, will speak to the club in executive dining room, 7:30 p.m.

Pre-Christmas cavalcade will depart from Lawton's Chuck Wagon, 8090 University, La Mesa, at 8:30 a.m., Dec. 10.

Gerry Wright, commissioner, said each member should bring a lunch for this rally which will cover a distance of 200 miles.

Additional information can be obtained by calling Bill or Hilda Ochodnicki, ext. 1164, or CO-4-0934.

Over 116 drivers turned out to compete in the Sports Car Club's "Field Day," Nov. 19 at Brown

Mardis, Halfacre Win Pistol Honors

Jim Halfacre, one of GD/Convair's most consistent marksmen, fired a score of 290 in .22 caliber Police Course, master class, to walk away with laurels in that division Nov. 26.

Action in center-fire Short National match saw D. V. Mardis (Dept. 34) sweep to first place with a score of 261.

Close behind Halfacre in master class were W. G. Walker (Dept. 6) with a 288 and Carl Hornburg (Dept. 139) with a 284.

Mardis displayed his pistol prowess in expert class when he took first place in that division with a 286 while Bill Ginsky (Dept. 6) fired a 248 in the sharpshooter category for first place.

Other contenders in .22 caliber competition were Ash Bishop (Dept. 401-5), expert, 280; E. E. Bickar (Dept. 215), expert, 277; Harvey Ingalls (Dept. 986-1), sharpshooter, 232.

Runners-up in center-fire were Halfacre, 256; Ralph Picard (GD/Electronics), 250; Bickar, 245; and Bishop, 244.

Pistol Club will cancel its regular Dec. 24 shoot.

Chief Plant Engineer 'Hank' Smith Retires

H. A. "Hank" Smith, chief plant engineer at General Dynamics/Convair the last seven years, retired from the company Nov. 30.

He joined Consolidated first at Vultee Field in 1942, and except for two breaks, had been in plant engineering throughout.

He left the company in 1948 to serve as assistant chief mechanical engineer with Kistner Curtiss & Wright Architects in Los Angeles, returning in 1951 as assistant chief plant engineer.

Field NAS. Trophies went to first ten positions and special plaques awarded 11-15 in standings.

Wright extended a hearty congratulations to the 75 GD/Convair club members "who worked hard to make this annual event a success." CRA club members were ineligible to compete.

Square Dancers Christmas Party Planned Dec. 21

High stepping square dancers from both the Hoedowners and the class will converge on American Legion Hall, 4061 Fairmount Ave., Dec. 21 for their annual Christmas party.

Festivities, starting at 8 p.m., will include a visit by "Santa" gift exchange and surprise-filled stockings for the kids, according to Maury Scholz, commissioner.

At the Nov. 14 meeting Carl and Gladys Bishop were elected president; Lloyd Burris and Dorothy Daughn, vice president; Lawrence and Virgie Bishop, secretary; Joe and Sheila Franc, publicity chairmen.

Stan and Louise Fandel and Wes and Muriel Oswald were selected to represent the Hoedowners in San Diego's Square Dance Association.

Turkey winners were Delores Humes from the club and Paul Dreoble from the class.

New officers assumed their positions Dec. 1.

Figure Skating Club Sponsoring Carnival

San Diego Figure Skating Club, a member of the U. S. Figure Skating Association, will stage an Ice Carnival at Iceland skate rink, 6055 Lake Murray Blvd., Dec. 10-11. Show time is 7:30 p.m.

The cast, all amateur skaters, will star in individual and production numbers. Mrs. Audrey Erickson, who also instructs General Dynamics skating groups, directs the show.

Tickets are \$1 each and may be obtained at the door.

Xmas Lights Banned For In-Plant Trees

Departments planning to erect Christmas trees in GD/Convair plant areas are reminded that strings of electric lights are prohibited, said M. C. Val Dez, chief safety engineer.

Balls, tinsel, angel hair, or any other non-burning material is approved for tree decoration. However, as a safety measure, said Val Dez, only official company Yuletide trees will sparkle with lights. These will be installed by plant engineers.

Sports & Recreation

Big Game 'Big' Prize Awaits Hunters

A weekend of "double-barreled, high-velocity" events is planned when General Dynamics hunters converge on Gillespie Field Clubhouse for the "Big Game" drawing Dec. 9 and the Christmas Shoot Dec. 10 and 13.

Open to all GD/Convair and GD/Astro employees, "Big Game" night will get under way with a trap-shooting exhibition at 7 p.m.

Crystal Wright, "Miss Convair Hunter-1961" will assist in the drawing, Jack Swank, CRA commissioner, announced.

First prize winner will have choice of a ribbed-barrel maple wood Winchester shotgun or a .308 Remington automatic loader rifle.

Swank said over 100 hunters have submitted their "kills" and that entries will be taken until the drawing.

Gun Clubbers can follow up the drawing activities Sunday (Dec.

10) or Wednesday (Dec. 13) by entering the ARA-CRA Christmas Shoot.

Beginning at 9 a.m. Sunday and 7 p.m. Wednesday, competition will be held in trap, skeet and skee-trap shooting.

Swank said prizes will be of "hodgepodge" variety including "top-shelf" bourbon, dinners at the Cotton Patch, hunting and kitchen accessories, jewelry and hams.

Entry fee is \$1.00 a person.

Other activities slated for "Big Game" night will include presentation by Arnold Schrock of his hunter safety graduating class, an exhibition of reloading equipment for shotguns and rifles and guest talks by fish and game officials.

Swank extended a cordial invitation to shooters, beginners and experts, to join in the weekend's festivities.



WELCOME—Lovely Crystal Wright (Dept. 97) enthusiastically throws back her hands in a big welcome for all GD/Convair and GD/Astro hunters to attend CRA's annual "Big Game" night Dec. 9. Giving her "help" are (l-r), Carl Monds, Bob Cushman, Lou Steiner, Jay Cushman, "Gunner" Gatterman and Howard Jacklin.



TURKEYS TUMBLE—More than 88 archers converged on Balboa Park Field Range for recent turkey shoot. Shown above before turkey target with "hidden heart" are (l-r), E. V. Green, Bob Wheeler, Danny and Dick Jones.

CRA Archers Act as Host For Annual IRC Tourney

Close on the heels of a highly successful turkey shoot, GD/Convair's Archery Club will host the eighth annual IRC and San Diego Park and Recreation Association tournament Dec. 10.

Open to all employees and their families of IRC member firms, registration will take place at 8:30 a.m., Balboa Park Field Range.

Morning shooting will feature 28 field shoots with 14 animals and 14 hunters following in the afternoon.



BEAUTY AND BOWS—Kathy Duncan, California's "Miss Archery," poses with Commissioner Elmer Dahlstrom, left, of GD/Pomona, and Al Phipps, GD/Convair commissioner.

Al Phipps, CRA commissioner, said entries will be taken until registration closes and that a fee of \$1.50 per adult and 75¢ for intermediates and juniors must accompany each entry.

First-place trophies will be awarded in all divisions where there is competition, (four in a division is considered competition).

In other Archery Club news, plans to stage an all-General Dynamics tourney which will include participants from both western and eastern divisions are under way.

Phipps, who is spearheading the drive to gain corporation-wide participation, said the "competition by mail" shoot will pit some of the nation's top archers against each other.

"We hope to kick this thing off about the first of the year with results being mailed here and team standings published periodically in General Dynamics NEWS," Phipps commented.

Various classes of competition depending on age and ability will be established so that both beginners and experts will have a chance to compete for prizes.

Phipps asked for a "show of hands" in the form of letters from other division commissioners or groups interested in taking part.

Additional information can be obtained by writing:

W. A. Phipps
2318 Upas Street
San Diego 4, California

CRA Calendar

(Convair Recreation Association has some 40 activities in operation. For information on Convair sports, call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

ARCHERY—CRA group hosts IRC tourney Dec. 10, Balboa Park Field Range. Registration at 8:30 a.m.

BASKETBALL — Meeting of shop league representatives Dec. 7, 4:45 p.m., CRA Clubhouse.

BRIDGE — Weekly sessions each Tuesday, 7:30 p.m., Barcelona Hotel, 326 Juniper St.

CAMERA CLUB—Meeting Dec. 11, 7:30 p.m., Photo Arts Bldg., Balboa Park.

COIN CLUB—Election of officers, gift exchange Dec. 21, 7:30 p.m., Convair executive dining room.

FENCING—San Diego Invitational Tournament hosted by ARA-CRA Fencing Club, 1-8 p.m., Dec. 17, Downtown YWCA. Public invited.

FISHING CLUB—Nomination of officers Dec. 19, 7:30 p.m., Gillespie Field Clubhouse.

GARDEN CLUB — Christmas party Dec. 13, 7:30 p.m., Floral Assoc. Bldg., Balboa Park.

GUN CLUB—Big Game drawing Dec. 9, 7 p.m.; Christmas Shoot, Dec. 10, 9 a.m., and Dec. 13, 7 p.m., all at Gillespie Field.

ICE SKATING — Skating sessions each Thursday, Iceland, 6055 Lake Murray Blvd., 6:30-8 p.m.

JUDO—Instruction each Thursday, 7 p.m., CRA Clubhouse, Pacific Hwy.

MODEL RAILROAD — Meetings each Friday, 7:30 p.m., House of Charm, Balboa Park.

MOVIES—Reduced price movies each Friday, Saturday, Sunday at Adams Theater, 3325 Adams Ave. Admission: adults, 50¢; children under 12 free if accompanied by adult.

PISTOL CLUB — Next shoot Dec. 10, 9 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB — Meeting tomorrow (Dec. 7), 8 p.m., Harbor Drive headquarters.

ROCKHOUNDS — Christmas party Dec. 14, 8 p.m., Gillespie Field Clubhouse.

SOLO FLYERS — Ground school open for new students tonight (Dec. 6), 7:30 p.m., Jim's Flying Service, Lindbergh Field.

SQUARE DANCING—Christmas party Dec. 21, 8 p.m., American Legion Hall, 4061 Fairmount Ave.

TENNIS — CRA-ARA doubles tourney Dec. 16 Morley Field, Balboa Park. Call Pete Beyrer, ext. 1245, Plant 1.

GD/Convair Baseballers Finish Top in Industrial League Play

Behind the no-hit, no-run pitching of Bill Murphy, GD/Convair collected 22 hits Nov. 19, burying Lemon Grove 17-0 to emerge undisputed first half champion of the Industrial Winter Baseball League.

Murphy, who walked just two batters in pitching his one and only game, totally dominated the hapless Lemon Grove team.

GD/Convair's win-loss record now stands at 4-0.

Convair Golfers Win 31 Turkeys

Thirty-one General Dynamics families solved their Thanksgiving turkey problems at Convair Golf Club's Sweepstakes Nov. 18 and 19 at Bonita.

First and second place low gross scorers and the three leading low net golfers in each of four handicap brackets won prime birds.

Shooting low gross scores in 0-10 handicap class were Speed Martin with 74, and Walt Rye with 75. Low net honors went to Dick Tobias with 67, while C. B. Bagaloff, Alex Bezverkov and Harry Richards tied for second with 69, and Jack Ross, Dick Ransdell and Jack Weaver shot third-place 71s.

In the 11-13 handicap bracket, Ray Demitrowicz and Ed Caldwell led low gross scorers with 78 and 79 respectively. Low net was led by Harry Bodwell with 66, and John Mellett with 68. Chuck Hopkins, Jerry Swarts, Oscar Bowling and Mark Pruitt tied for third with 69s.

Fred Wells shot an 80 for low gross in the 14-21 handicap class, while Bill Marshall scored 81. Low net winners were Art Braudic with 66, Ivan Raney with 67, and Hal Heist, Ernie Stuchly, Phil Raney and Len Therrien with 71.

The 22- and -up handicappers were led by Charlie Walton (90) and Larry Broussard (92) for low gross, while "Frenchy" Desrosiers (68) won low net. Taking second place honors in net competition was Jim Rose with 71, while Lee Woll and Gert Silva shot 72s for third.

Santa Plans Visit; But Not Down Chimney

Gillespie Field Clubhouse may not have a chimney but old "Saint Nick" will be on hand anyway for Rockhounds' next meeting, Dec. 14, 8 p.m.

CRA Commissioner Danny Whorton said Padre Puppeteers will present their Christmas show at the meeting for added entertainment.

Pounding out eight extra base hits, three of them triples, GD/Convair is assured of a position in the play-offs when season ends in January.

Pete Beyrer, team manager, cited short-stop Chuck Vanderhoff as the club's most consistent hitter and praised Eddie Moraga's steady pitching efforts as two big reasons for the team's success.

On the way to first half championship, GD/Convair edged Rohr 6-5, clipped National City 8-7 and swamped Oceanside, 10-5.

Beyrer said his ball club will meet the second round winner in a three-game series to determine seasonal champion.

Industrial League Standings

TEAM	W	L
GD/Convair	4	0
Oceanside	3	1
National City	2	2
Rohr	1	3
Lemon Grove	0	4

Second Round Schedule

Dec. 10
GD/CONVAIR vs. Rohr at Mission Bay High.

Lemon Grove vs. National City at National City.

Dec. 17
GD/CONVAIR vs. Oceanside at Mission Bay High.

Rohr vs. Lemon Grove at National City.

Jan. 7
GD/CONVAIR vs. Lemon Grove at Golden Hills.

Oceanside vs. National City at Oceanside.

Ground School Is Reopening

Solo Flyers' semi-annual ground school at GD/Convair will swing into its second portion with 10 class positions open for persons who attend tonight's (Dec. 6) lecture.

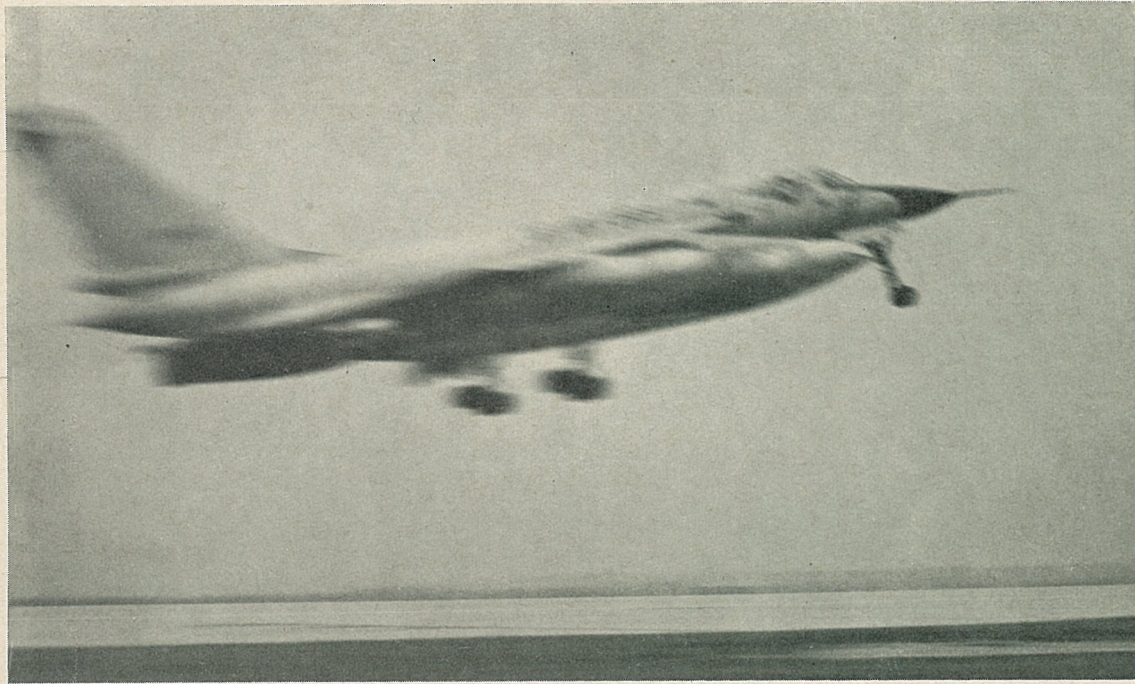
CRA Commissioner Ted Sanford said second half will cover meteorology, an intensive review of the entire course and a field trip to the FAA control tower, communications center, weather bureau at Lindbergh Field.

Class meets at 7:30 p.m., Jim's Flying Service, Lindbergh Field.

Taught by GD/Convair engineer Rex Robinson, tonight's lecture will be the ninth of 19 weekly sessions to prepare students for Federal Aviation Agency's private pilot license examination.

Four meteorology lectures will include investigation of weather elements, forecasts, sequence reports, ceiling, air masses, and weather maps.

Additional information can be obtained by calling Robinson, ext. 2265, Plant 1.



ALL-WEATHER—Tactical B-58 Hustler streaks skyward through fog and mist on another simulated combat sortie from base at Carswell AFB, Fort Worth.

Sharpshooting Cameras Answer 'Elbow Room' Questions in B-58

How much "elbow room" does an airman need to operate safely inside a B-58 escape capsule? Precisely where should critical equipment be placed, assuring the Hustler crewmen maximum safety and comfort in flight and during high-speed ejection?

These and a host of other thorny questions were answered

by pioneering General Dynamics/Fort Worth engineers before the first production capsule—now being static-tested—could be assembled.

Prime consideration had to be given both to the airman's size and body attitude during positioning for ejection.

"We had to figure a way to

measure the distance of various body parts during a few vital postures," said John W. Chaffee, senior design engineer who holds a degree in physical anthropology from University of North Carolina.

"This is quite a new problem. Universities hadn't done any work to speak of in the field, and at that point the Air Force hadn't done much research in body-size requirements for supersonic escape. Obviously, direct physical measurement during simulated movements would be imprecise and too time-consuming."

To solve the problem, Chaffee turned to "andrometry," his own coined word which means measuring man by special photography. The method is similar to that used in aerial mapping.

He selected 24 GD/FW volunteers who fall within the minimum and maximum size ranges required for Hustler flying duty.

Each of the men was placed in a simulated capsule, where he went through various maneuvers. Two 8x10 view cameras with long focus lenses, placed at 90 degree angles to each other, clicked away during these movements. Another overhead camera was also used on occasion.

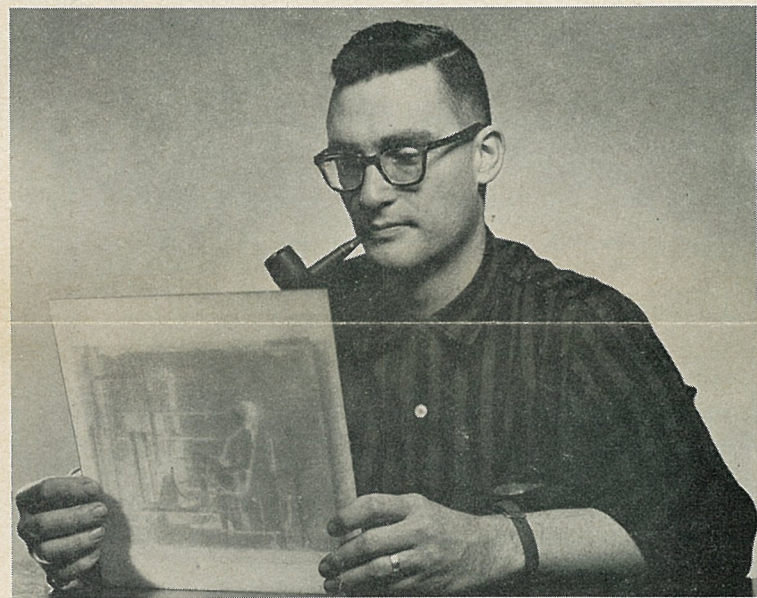
"Our method produced negatives which included the test subject, certain fixed reference points, and a stationary seat reference point (SRP) from which all measurements were made," Chaffee said.

"The position of each visible anatomical point on the body appearing on the negatives was then measured on the negatives with respect to its distance from the SRP."

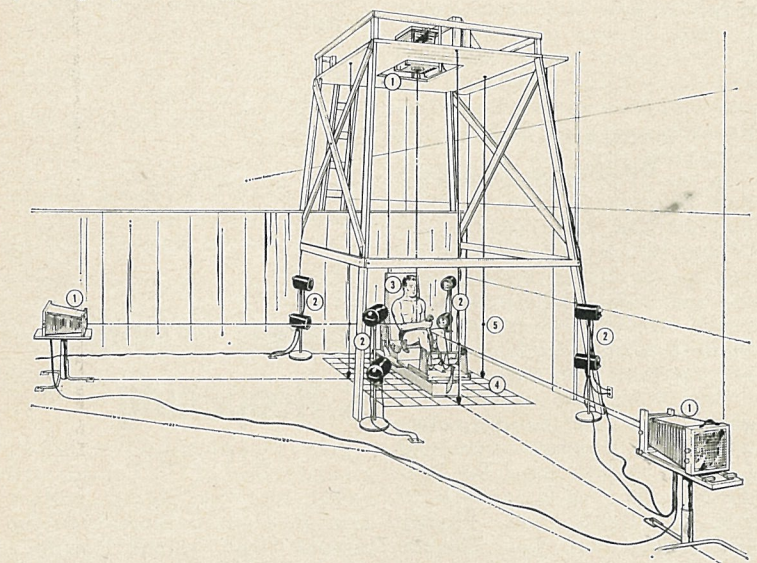
These data were then used to establish minimum internal dimensions of the capsule, as well as the most desirable location for arm rests, head rests, and necessary restraint devices.

Final dimensions called for a capsule that would conveniently accommodate the middle 90 per cent of men physically qualified to fly in Hustlers.

"Andrometry has some decided advantages," Chaffee said. "Since negatives form a permanent record, a later analysis of them may be made to obtain various type data other than that originally required. It also makes it easier to check in cases of apparent errors in tabulation—a common thing in survey-type work."



RESULTS—John W. Chaffee, GD/FW physical anthropologist, inspects negatives on which men's movements were measured precisely. Photographer Aaron Murray, who helped arrange complex photograph coverage, took picture.



"ANDROMETRY"—Method for photographing movements of volunteers in simulated B-58 escape capsule is shown in artist's drawing. (1) Cameras; (2) Strobe lights; (3) simulator; (4) reference grid; (5) fixed reference points.

Missile and Aircraft Leaders Briefed On Terrier, Tartar, Redeye at Pomona

Nearly 70 leaders of Southern California's missile and aircraft industry visited General Dynamics/Pomona Nov. 15 for briefings on the Tartar, Advanced Terrier and Redeye missile programs.

Included in the group were administrators and engineers from North American, Marquardt, General Electric, Northrop, Hughes, Aerojet-General, Lockheed, Douglas, Radioplane, Aeronautics, Litten, Meletron, Jet Propulsion, Rocketdyne, Borg-Warner, Gen-

eral Motors, Autonetics, Astropower, Forsnas, Aerospace, Avien, Space Recovery, Ballistics Systems, New York Air Brake, Menasco, American Astrophysics, American Metal and Western Aircraft.

All are members of the Institute of Aerospace Sciences.

A confidential-level briefing on the three guided missiles was authorized by the Bureau of Naval Weapons and Office of Chief of Ordnance.

GD/E's Versatile 4020 Recorder Performs Varied Astro Tasks

A device which automatically plots detailed graphs, writes out pages of technical data, and prepares drawings, is now in use at General Dynamics/Astronautics by telemetry data processing (Dept. 591-5).

The 4020 High Speed Microfilm Recorder built by GD/Electronics' Information Technology group provides rapid means of displaying, reproducing and storing information processed by GD/Astro's IBM 7090 computer.

Heart of the 4020 is GD/Electronics' Characteron shaped-beam tube which enables it to "write" up to 15,000 letters, numbers or characters per second. In a like interval, the high intensity, high resolution tube can draw 2,500 straight lines between pairs of given points, or generate up to 1,000 horizontal or vertical axes.

Computer information is translated into characters which the 4020 records with two 35 mm cameras.

One camera produces high quality film strips suitable for long-term storage. (One small roll of microfilm contains information which would fill a four-drawer filing cabinet with paper documents.)

The other turns out pictures on

the spot. These are developed by the 4020 and displayed on a large screen within eight seconds after exposure.

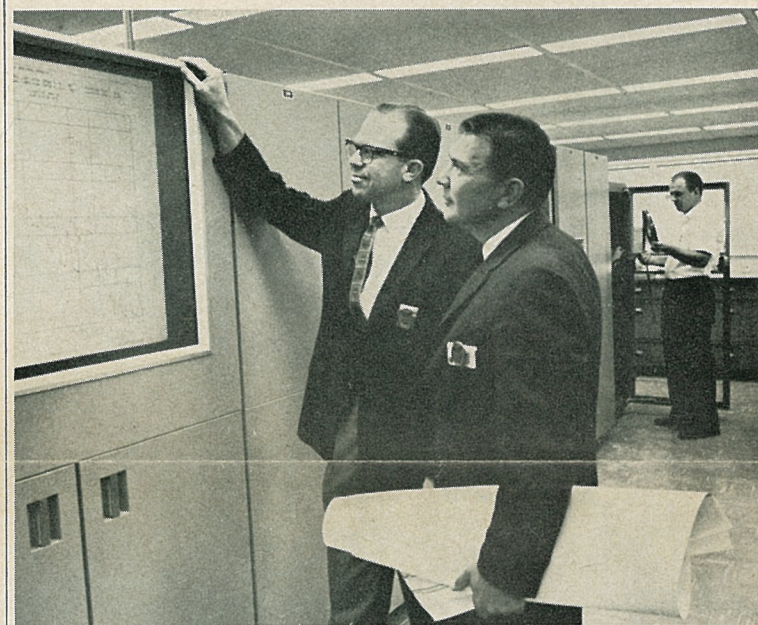
Presently the 4020-7090 combination is used on such projects as preparation of flight test reports, laboratory test data, trajectory studies, etc. These tasks utilize the 4020's skill at precision plotting of graphic information.

"By former manual methods, draftsmen used information from the computer to plot several points on a curve," explained H. E. Pietsch, research group engineer. "In a fraction of the time required for the manual task, the 4020 presents a more accurate picture by utilizing several times as many points in drawing a plot."

In handling printed material, the 4020 can produce a typical magazine page in less than a second.

"After several months of use, we are still finding new uses for this versatile equipment," Pietsch added.

Working with Pietsch to explore the 4020's capabilities are C. C. Dragila, research group engineer, and K. Leon Montgomery, research engineer.



PLOTTER—H. E. Pietsch and C. C. Dragila of GD/Astro examine large-screen projection of annotated graph drawn by GD/Electronics' 4020 High Speed Microfilm Recorder, while W. D. Thompson, rear, prepares another computer tape for insertion. Dragila holds blueprint-size "Copyflo" print made from 4020 presentation.

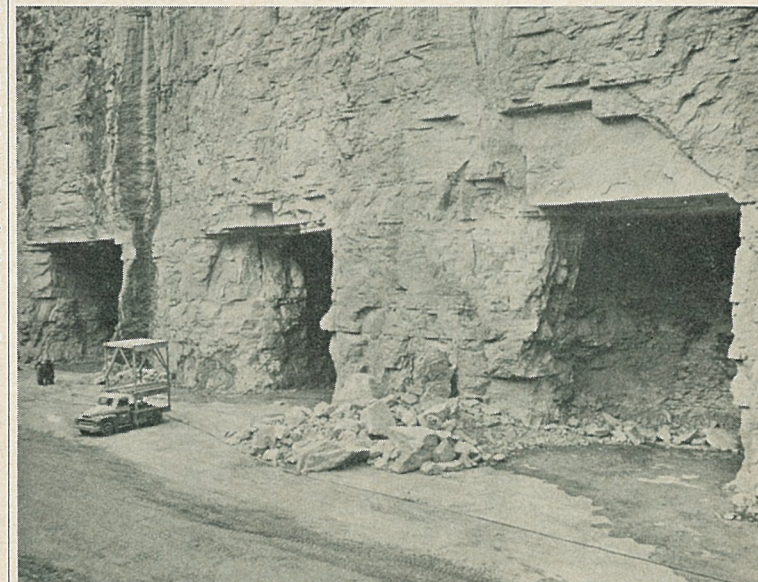
San Diego City College Educators Tour GD/Convair Production, Flight Facilities

H. W. Rubottom, GD/Convair chief of educational services, conducted three San Diego City College administrators on a tour of General Dynamics/Convair production and flight facilities late last month.

Walter L. Thatcher, City College director, Joseph H. Stephenson, dean of trade and technical education, and Walter G. Coats, coordinator of technical education, saw the 880-M and 990 assembly line, and inspected com-

pleted aircraft on the flight line. Since City College technical program contributes to GD/Convair training, the visit was arranged to demonstrate effectiveness of cooperative training, said Rubottom.

According to Thatcher, the tour pointed up the close relationship existing between local industry and City College as the school strives to meet varied educational and training needs of the community.



SHELTERS—Chicago Civil Defense authorities have eyed old (over 100 years) stone quarry owned by Material Service Division of General Dynamics as possible bomb shelter. Located only 15 minutes from Loop, it is 350 feet deep with massive caves running laterally.

First Woman Flies Mach 2 in F-106

Carol Johnson of the Newhouse Broadcasting Corp. may be the first woman to make a Mach 2 flight in a Convair F-106.

Women's editor of radio station WSYQ, Syracuse, N. Y., she made the supersonic flight while covering the William Tell weapons meet at Tyndall AFB, Fla. So far as it is known, no other woman has made a Mach 2 flight.

A Merry Christmas to ALL General Dynamics

Since my last Christmas and New Year message to you, our country has had one more year at peace. All of us in General Dynamics can take pride in the share our Corporation has played in contributing to the stability and strength of the free world.

1962 promises to be another demanding year. Threats from Communism, economic competition from abroad, and requirements

for increasing efficiency at home will make for a year of hard work and change. We Americans are strangers to neither. We can take pride in the qualities of initiative, determination and imagination which are ours to draw upon for the tasks and opportunities ahead.

As we assess the future at this year end, it is wise for us to remember once again that as a nation and, I might add, as a corporation we can accomplish much as

a team, but that no team is better than the effort made by its individual members.

To each one of you may I express thanks for your contribution during the past year. Your Board of Directors joins me in all good wishes for Christmas and the New Year. May the traditional joys of family, of giving, receiving and sharing, be yours to the fullest.

Frank Pace Jr.
Chairman of the Board

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Wednesday, December 20, 1961

Teams Confer On Progress of C-141 Jet Job

Teams of Lockheed-Georgia Co. and General Dynamics/Convair men have been going coast to coast in the last couple of weeks coordinating C-141 subcontract activities.

Half a dozen Lockheed administrators were at the San Diego plant this month for consultation on progress of GD/Convair's work on the C-141 cargo jet transport for the Air Force.

H. Lee Poore, C-141 manufacturing manager; R. D. Gilson, C-141 project engineer; J. W. Flournoy, C-141 assistant project engineer; N. F. Hill, material administrator for C-141 subcontracts, conferred with J. M. Adamson, GD/Convair project manager for the C-141 empennage contract, and members of his project staff.

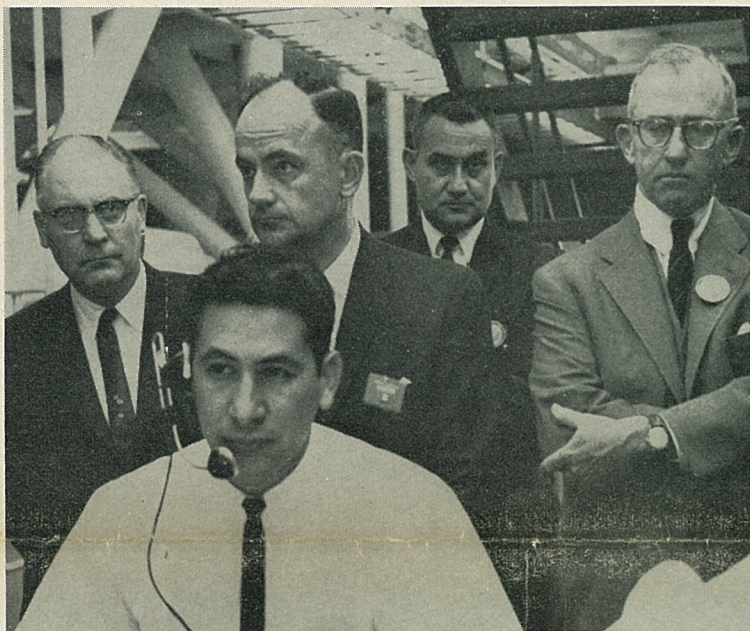
Poore, Hill, Adamson met with E. J. Williams, General Dynamics senior vice president, manufacturing, and J. J. Alkazin, GD/Convair director of contracts, planning, and service parts, for an exchange of corporate policy.

L. L. Jackson, Lockheed-Georgia quality control manager, and J. B. Larsen, C-141 subcontracts quality manager, conferred with W. J. Martin, GD/Convair director of quality control and production flight. They discussed FAA approval, resident inspection, and materials review.

Going to the opposite side of the country last week were Adamson and eleven other GD/Convair men to coordinate empennage configuration and associated weight.

Besides Adamson, those making

(Continued on Page 2)



INTENT—Absorbed in composite test of Atlas missile at GD/Astro, being conducted by engineer Oscar Rendon, are, from left: W. P. Gullander, Dynamics executive vice president; Dr. J. V. Charyk, Under Secretary of Air Force; W. W. Withee, Astro vice president-research and engineering; and Frank Pace Jr., chairman of Dynamics board of directors.

990 Jetliner Certified As F & R Reaches Climax

Convair's 990 jetliner, follow-on to the 880 jet transport, received full certification from Federal Aviation Agency late last Friday (Dec. 15).

The airworthiness type certificate will permit 990s to go into passenger service over customer airline routes. First of the giant craft will go to American Airlines, Swissair, REAL/Varig of Brazil. American expects to begin service over domestic routes in February.

As the certification program

drew to a close, plane No. 6 completed its functional and reliability chores after 210 hours in the air, traveling close to 76,000 miles back and forth across the country.

It wound up several weeks of crisscrossing over actual airline routes the weekend of Dec. 9-10 when it flew to Tennessee for rain clearance take-offs and landings. Pilot W. D. Carrier finally located enough rain at Nashville to satisfy

(Continued on Page 2)

Gullander Given New Responsibility; Famme GD/Convair President

W. P. Gullander's responsibilities as executive vice president of General Dynamics last week were extended to include the Corporation's western divisions, as well as the eastern divisions which have reported to him for some time.

The announcement was made at a Board of Management meeting in San Diego. Henceforth, all division executive heads report to him. Gullander and all Corporate staff executives continue to report to Earl D. Johnson, Dynamics president.

At the same time, J. H. Famme, formerly GD/Convair vice president and general manager, was named GD/Convair president.

Succeeding Famme as GD/Convair vice president and general manager is Robert A. Neale, previously director of operations. Neale, a former vice president for manufacturing at Canadair Limited, (1950-1957), was a Boeing executive for 17 years.

To fulfill his expanded duties, Gullander is expected to divide his time between San Diego and New York headquarters, according to the press of business.

Gullander came to General Dynamics in 1960 after eight years as vice president-finance of the Weyerhaeuser Co., of Tacoma, Wash. A native of Big Rapids, Mich., and graduate of the University of Minnesota, Gullander was with General Electric Co. for

22 years, holding executive posts including chief traveling auditor and manager of subcontract operation for the Aircraft Gas Turbine Division and district manager, secretary and treasurer of the General Electric Supply Co.

Famme, veteran Convair engineering and production executive, was director of manufacturing development for western divisions when he was assigned to GD/Convair last spring as assistant division manager-operations and later was vice president and general manager. He has been with the company more than 25 years.

Engineer Study Task Awarded

A contract for engineering services has been awarded General Dynamics/Convair by the Air Force through San Antonio Air Materiel Area, Kelly AFB, Texas.

Terms of the contract are for time and material required, on a call basis, in modifications and investigations for the T-29, C-131, F/TF-102A, F-106A and F-106B.

Military engineering and interceptor service engineering personnel will be engaged in studies required, although a limited amount of hardware will be developed and built as prototypes.

Membership in Con-Trib-Club Boosted to 86% at GD/Convair

General Dynamics/Convair boosted its membership in the company's Employees' Con-Trib-Club to 86 per cent during the annual drive held the first of this month.

As the campaign came to a close, final report showed a total of 14,231 employees contributing through payroll deduction, announced J. K. Field, chief of employee services. This raised percentage figure from 78 to the present 86 per cent.

GD/Convair pledged \$125,000 to the United Fund for distribution to San Diego charitable organizations. It will be paid in quarterly installments.

Field expressed thanks for the good response of new members as well as increase in amount of pledges.

Needy families in the area will be receiving Christmas baskets by courtesy of Con-Trib-Club. Usual donation of \$1,000 to the

Salvation Army was earmarked for providing a happier holiday for as many as possible.

Other contributions approved this month saw \$1,000 going to Muscular Dystrophy Associations of America, Inc.; \$1,000 to Otero County United Fund, Alamogordo, N.M., on behalf of GD/Convair people based at Holloman AFB; and \$500 to Otero County Association for Retarded Children.

Salvage Yards Close Christmas, New Year's

Employees at both GD/Astoria and GD/Convair are reminded that salvage yards at both San Diego facilities will be closed during both Christmas and New Year's weekends.

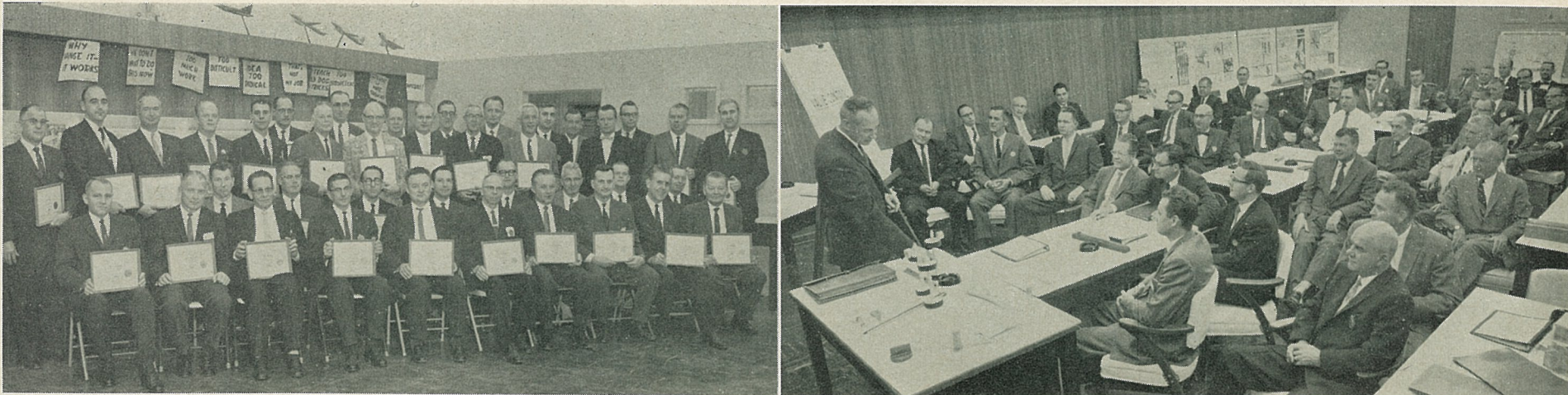
January schedule will be:

GD/Convair—Jan. 6 and 20.

GD/Astro—Jan. 13 and 27.



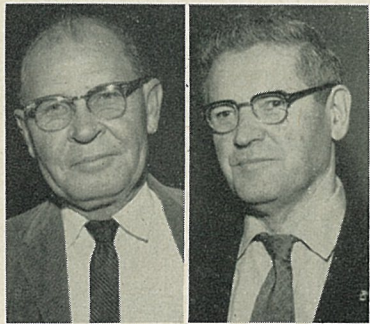
C-141 CONFERENCE—Key men from Lockheed-Georgia Co. and GD/Convair confer on C-141 empennage subcontract at San Diego. Above are (from left) J. W. Flournoy, C-141 assistant project engineer; R. D. Gilson, C-141 project engineer, both from Lockheed-Georgia; R. A. Neale, vice president of GD/Convair; N. F. Hill, Lockheed C-141 subcontracts material administrator; W. D. Reed, GD/Convair manager of subcontract production; H. Lee Poore, Lockheed C-141 manufacturing manager; W. R. Bruce, manager of material; Vince Cernuta, manager of production services; J. M. Adamson, C-141 project manager, all of GD/Convair.



SEMINAR SESSIONS—At left is group of 40 GD/Convair supervision with diplomas received at conclusion of first value engineering seminar in current program. GD/Convair and GD/Electronics executives (at right) hear E. D. Heller, GD/Pomona value control coordinator, explain value vs. cost principles.

Log Book Entries

Service Emblems



OLD-TIMERS — Receiving 25-year service emblems last month were Earl G. Denniston, Dept. 145, left, and Frank Mische, Dept. 401.

CONVAIR

Service emblems due during the period Dec. 16 through Dec. 31.

Thirty-year: Dept. 144, E. T. Gahlbeck.

Twenty-five-year: Dept. 171, A. A. Duncan.

Twenty-year: Dept. 1-23, R. F. Meeker; Dept. 1-31, A. C. Crum; Dept. 3, E. A. Haseltine, H. G. Sturdevant; Dept. 6, S. E. Beemer, A. B. Billing, R. H. Hall, R. J. Kudrna, R. A. Nichols; Dept. 14, V. V. Barghols; Dept. 24-2, J. H. Maloney; Dept. 31, H. E. Brust, G. B. Parham.

Dept. 42-0, H. A. Adams Jr.; Dept. 48, G. W. Ramsey; Dept. 50, J. A. Crossman; Dept. 101, L. S. Meland, W. E. Senay; Dept. 102, W. J. Day; Dept. 115, K. B. Boers; Dept. 135, Benigno Flores; Dept. 137, H. P. Alcaraz; Dept. 142, Jack Gane; Dept. 148, Carlos Mendoza Jr.; Dept. 106, Guadalupe Lopez; Dept. 171, H. M. Lohre; Dept. 192, A. J. Simington; Dept. 215, E. R. Stanek; Dept. 271, G. V. Simmons; Dept. 400-6, Y. Z. Morris Jr.; Dept. 401, P. A. Campbell Jr.; A. W. Henry, V. P. Mavrinac.

Fifteen-year: Dept. 5, Paula D. Hamm; Dept. 14-9, H. T. Christopherson; Dept. 31, F. J. Fischl; Dept. 44-4, Teresa H. Vesock; Dept. 45-1, A. R. Brunner; Dept. 48, F. S. Walsh; Dept. 101, Solomon Elhard; Dept. 116, Carmelita R. Slack; Dept. 129, E. E. Day; Dept. 135, B. J. Paolini; Dept. 140, James Williams; Dept. 171, G. D. Howard; Dept. 192, H. L. Carlisle, J. J. Ward; Dept. 400, Bertha B. Howard.

Ten-year: Dept. 1-18, W. A. Roberts; Dept. 1-42, Betty Ann Jones; Dept. 6, F. A. Buffington, Chloe M. Gilliland, J. D. Hartsell, R. E. Kezar, A. R. Marshall, Mark Matyas Jr.; Dept. 11-0, O. H. Patterson; Dept. 15, H. C. Coates, R. L. Harris; Dept. 16-4, Doris T. Christian.

Dept. 21-3, D. J. Cummons; Dept. 25, F. H. Bowler, George Dixon, E. E. Nyberg; Dept. 31, R. L. Fronius, L. B. Housley, E. O. Lapanne, F. L. McCord; Dept. 34-2, E. N. Enault; Dept. 46-0, H. J. Troyer; Dept. 48, K. E. Bernard, R. L. Gill.

Dept. 97-6, Dorothy L. Thompson; Dept. 101, J. J. Smith; Dept. 123, Louisa R. Salinas; Dept. 129, Eula C. Campbell, Antonia P. Fuentes; Dept. 133, C. E. Camerson; Dept. 135, H. C. Wilborn; Dept. 136, Robert Guthaus; Dept. 140, William Hernandez; Dept. 145, H. H. Morris Jr.; Dept. 148, Luis Lopez, C. O. Z. Parker Jr., R. M. Tate; Dept. 160, F. M. Bretado, W. E. Stitzel; Dept. 171, W. H. Wilson Jr.; Dept. 192, Carolyn D. Costa, Doris P. Kellhofer, Inga A. Swiderski; Dept. 204, M. D. Moya; Dept. 215, J. T. Bryant; Dept. 400, C. A. Digilio, Richard Moore, T. B. Packard; Dept. 401, Mary D. Conary.

ADVANCED PRODUCTS

Fifteen-year: Dept. 986-1, R. D. Liles.

GD/ELECTRONICS

Fifteen-year: Dept. 3, D. L. Peterson.

Ten-year: Dept. 5, C. T. Sears; Dept. 6, A. B. Conday; Dept. 7, S. E. Womack.

Retirements

CONVAIR

BENSON—Maria M., Dept. 101. Seniority date Oct. 18, 1950, retirement effective Dec. 1, 1961.

BUFFALO—Edgar D., Dept. 135. Seniority date Oct. 23, 1939, retirement effective Nov. 30, 1961.

DAVIE—Arthur L., Dept. 101. Seniority date Jan. 9, 1952, retirement effective Dec. 1, 1961.

HILL—Glenn W., Dept. 280. Seniority date Sept. 14, 1953, retirement effective Dec. 1, 1961.

KING—Irene E., Dept. 15-3. Seniority date Feb. 16, 1956, retirement effective Dec. 4, 1961.

PALMER—Harold B., Dept. 110. Seniority date March 13, 1953, retirement effective Nov. 20, 1961.

ROSSOLL—Felix J., Dept. 15-1. Seniority date Jan. 31, 1952, retirement effective Dec. 1, 1961.

SMITH—Henry A., Dept. 25. Seniority date May 15, 1951, retirement effective Nov. 30, 1961.

SPARKS—Emery J., Dept. 160. Seniority date Nov. 1, 1950, retirement effective Nov. 30, 1961.

WOODS—Ellis G., Dept. 101. Seniority date Oct. 26, 1950, retirement effective Nov. 24, 1961.

Promotions

CONVAIR

Promotions to or within supervision effective Dec. 4.

Dept. 11, Contracts: To contract administrator, G. D. Clark.

ADVANCED PRODUCTS

Dept. 986-1: To national sales manager, W. G. Mang.

GD/ELECTRONICS

Dept. 2, Controller: To controller, R. C. Smith.

Dept. 3, Quality Control: To manager of inspection, J. W. Barrett. To inspection asst. supervisor, D. L. Peterson.

Dept. 6, Manufacturing: To assistant foreman, W. Hungerford, M. J. Lattuca, W. A. Ross.

Dept. 7, Material: To traffic administration supervisor, S. N. Garff. To M/C asst. foreman, F. B. Wagner.

Personals

CONVAIR

Mrs. S. J. Frank Haas Jr., and children, thank Convaair personnel most sincerely for the very beautiful flowers and many expressions of sympathy.

The family of Joseph F. Prestes (Dept. 180) gratefully acknowledges the kind expressions of sympathy from Convaair friends.

Mrs. John Rodden, Mrs. Mario Lage.

The beautiful flowers, messages of sympathy, and other kindnesses received from Convaair employees at the loss of my husband, Charles J. Siebuhr, Dept. 401-2, were deeply appreciated.

Mrs. Charles Siebuhr.

Births

CONVAIR

BOSCO—Daughter, Marilyn Diane, 8 lbs., 12 oz., born Dec. 9 to Mr. and Mrs. Gerard H. Bosco, Dept. 6. Mother, Do-reene Bosco, formerly in Dept. 8-5.

KIRKPATRICK—Son, Eric Kelvin, 7 lbs., 6 oz., born Dec. 9 to Mr. and Mrs. Archie D. Kirkpatrick, Dept. 31.

Deaths

CONVAIR

DUFFY—Mrs. Betty J., Dept. 16-6. Died Dec. 6. Survived by husband, Raymond A. Duffy, daughter, three grandchildren, father, four brothers, two sisters.

MELDRUM—George H., Dept. 44-3. Died Dec. 10.

Diploma Frames Value Controlled

Even frames for value control seminar diplomas were "value controlled".

They were made of scrap material from inside of window frames for 880/990s.

Tool was a picture frame from the wall of Howie Williams' office. Dept. 129 did the forming in same operation as jet transport frames. Trimming 45 cost \$1.80. Four pins to hold each diploma cost .20 for the lot. Wire was scrap.

Total cost per frame was just over four cents!



LINE FORMS—GD/Convair and American Airlines men line up as gag at Nashville, Tenn., airport gate advertising 990 flights (slightly in advance). From left, J. L. Fogleman, Don Hobart, Kelly Owen, AA acceptance pilot, E. J. Guske, John Buchanan, Harold Parker, Loren Pilling, Ron Feagan.

FAA Certification For 990 Jetliner Nears

(Continued from Page 1)

FAA requirements.

Besides Carrier, crew aboard for F & R flights were Loren Pilling, co-pilot; Jack Fogleman and Warren Walker, flight engineers; E. J. Guske, flight test engineer.

FAA men on the flight were John Francek, R. D. Powell, R. Bear, Harold Strawn, Walt Spellman, Rudy Kapustin.

Observing checkouts were Kelly Owen, American Airlines acceptance pilot, and GD/Convair engineers, Don Hobart, design engineering; Dean Bowden, thermodynamics; John Buchanan, reliability engineering.

Ground crew from field operations on the last flight was Harold Parker, William Smith, Ron Feagan, Joe Gryzb, Mike Gontesky.

Another 990, plane No. 4, was chasing wind all over the West last week to check one of the last major items of its certification schedule. It traveled to Spokane, Las Vegas, El Paso to make crosswind landings.

Other last tests were high-altitude takeoffs and landings at Albuquerque, "hydraulic system inoperative" landings at Edwards AFB; checkouts of aft baggage-compartment fire protection system, and flight data recorder.

Piloting the plane was W. H. Harse with Carl Jacobson of FAA as co-pilot. Crew members were Jack Rogers, flight engineer; Tom Hannelly, flight test engineer; Al Kosen, instrumentation engineer. Aboard during most of the final flights was William Chapman, weights engineer.

Value Control Really Rolling; Teams Report Big Cuts in Cost

Over 150 General Dynamics/Convair executives and supervisors have completed value control indoctrination within the last month in a stepped-up program to emphasize value vs. cost principles.

Eight teams working on actual projects ranging from C-141 empenage components to SATS MATS (small airfield portable landing strips) came up with suggestions that could mean hundreds of thousands of dollars potential savings. Project leaders, C. A. Ives, W. D. Lavis, D. L. Macey, M. R. Taylor, said that the five-men teams averaged 44 per cent cuts in costs, still retaining value.

Next step will be to turn potential savings into actuality, said H. P. Williams, manager of value control. Projects which are in production will be broken down into various sections. Team studies will be passed on to departments involved.

"King-size projects were assigned at the first value engineering seminar for three main reasons," explained Williams. "We want to emphasize importance of breaking down large projects into workable sections, and to point out procedure of value control application to actual projects. Also, we needed to establish lengths of time required for project evaluation."

Besides the 40 graduates from the first formal seminar under the reactivated program, two executive groups from GD/Convair and GD/Electronics, totaling 115, took capsule courses.

This is first step in Williams' plan to spread value control throughout GD/Convair operations at San Diego. "We want as many people to become acquainted with value control principles just as quickly as possible!" he stressed.

All who have taken the condensed course will be going back early next year for the entire two-week seminar.

E. D. Heller, value control coordinator of GD/Pomona, conducted the first executive session early this month for 35 administrators, 19 from GD/Convair and 16 from GD/Electronics. He

\$1 Turkey Dinners To Mark Christmas

A pre-Christmas dinner is in store for General Dynamics folk based at Astronautics, Convair, Electronics sites at Kearny Mesa and Plants 1 and 2.

Tomorrow (Dec. 21) will see turkey and all the trimmings on the menu at all Prophet Co. cafeterias at Astronautics and Convair. Price is \$1, including tax.

Menu is turkey and dressing, cranberry sauce, whipped potatoes, giblet gravy, buttered green peas, tossed green salad, rolls and butter, pumpkin or mince pie, choice of beverage.

GD/Convair Golfers To Compete Jan. 6-7

The first tournament of the new year for GD/Convair's Golf Club will be played Jan. 6-7 over Fletcher Hills course.

Reservations may be made starting today (Dec. 20) through Dec. 27. Call ext. 1705, Plant 1.

also earlier had given a short introduction to corporate officials.

Second group of 80 were superintendents, general foremen, and foremen from GD/Convair's operations departments. Value control seminar project leaders and participants assisted Williams in directing the meetings.

All phases of the regular two-week training were telescoped into six hours. Informative, speculative, analytical, planning, execution parts of the job plan schedule were allotted about 10 minutes each. An actual piece of hardware with realistic cost figures was handed out for a brainstorming exercise. Most teams arrived at nearly the same concept of the manufacturer in modernization of the product at a 15 per cent cost cut.

Administrative staff of J. H. Famme, GD/Convair president, will be pitting their wits against the same problem in the second phase of their indoctrination.

Other value control seminars are due to start the middle of January, said Williams.

Teams Confer On Progress of C-141 Jet Job

(Continued from Page 1)

ing the trip were R. W. Miller, project engineer; R. J. Schulte, assistant project engineer; R. C. Westbrook, structures group engineer; R. L. Fefferman, dynamics group engineer; J. R. Stitt, E. H. Love, D. L. Greer, senior structures engineers; E. E. Benson, weights design specialist; E. I. Seiden, senior weights engineer; E. H. Cooke, planning; D. R. Stewart, contracts.

Within the plant, design engineers assigned to the C-141 project are concentrating on their first production drawings. Complying with new military specifications requiring permanent drawings, they are using ink on Milar, a clear plastic material surfaced to take either pencil or pen. These may be used as negatives for reproduction onto metal for templates.

The new-type material provides more accurate drawings, more precise control, is shrinkproof and eliminates smudging.

Since the Air Force will require perfect drawings of the overall craft by the 1965 deadline date, Adamson explained, drawings made now for each component must be accurate and legible several years from now.

Anderson Shifted To Post With Astro

H. L. Anderson, former manager of quality control for GD/Electronics' Military Products division, has joined GD/Astronautics as assistant to R. E. Steele, chief of off-site quality control.

A 10-year General Dynamics Corporation veteran, Anderson was chief of inspection at GD/Convair's Palmdale flight test center prior to his association with GD/Electronics.

General Dynamics NEWS

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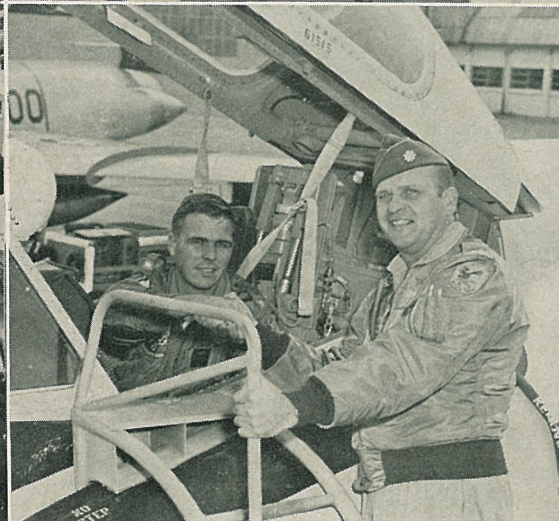
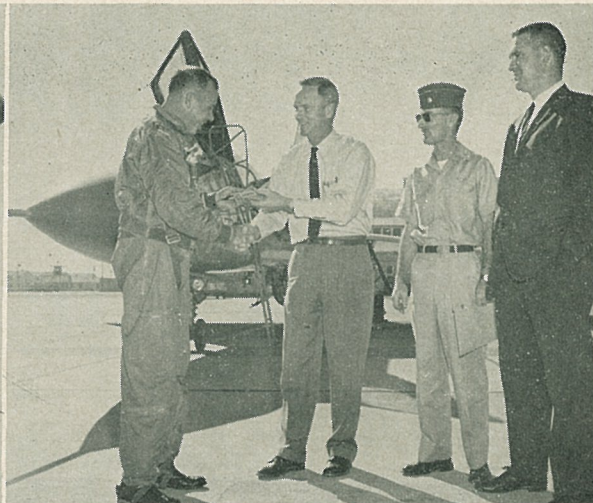
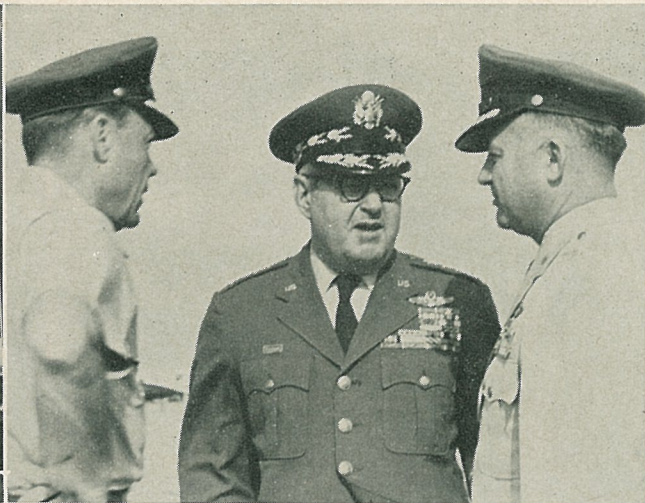
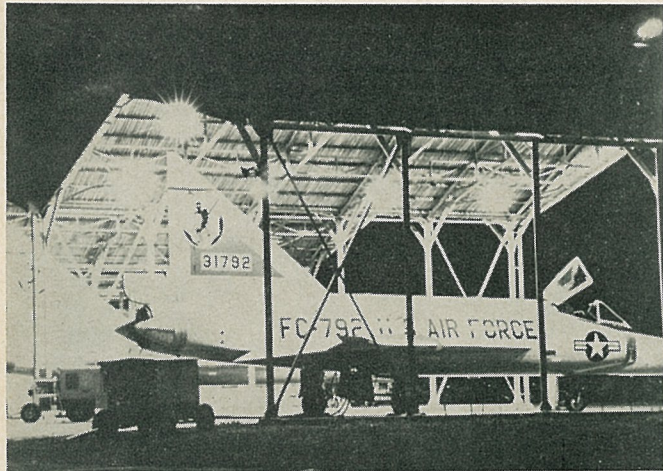
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SCOUTING THE DELTAS—In center photo at top Gen. Curtis E. LeMay, USAF Chief of Staff, is congratulated by Lt. Gen. Robert M. Lee, ADC commander (left) and Col. Glenn T. Eagleston, Tyndall AFB commander, after scoring bull's-eye at William Tell interceptor weapons meet, flying in Convair TF-102. At top left is F-102 at Itazuke Air Base, Japan, shown on alert at ready pads. Top right: Brig. Gen. Henry C. Newcomer (left) commander, Los Angeles Air Defense Sector, is congratulated by Collins C. Broadwater, GD/Convair field service rep, after first solo flight in F-106 at George AFB, Calif. Others are Maj. Jack A. Rockwell of 329th FIS and R. L. Robertson of Hughes Aircraft. In lower left, Maj. Gen. J. E. Taylor, adjutant general of Texas National Guard (center), goes through TF-102

cockpit check with Lt. Col. N. O. Didear, commander of 136th Air Defense Wing, before first ride. At left is Lt. Col. R. H. Taylor, commander of 147th Fighter Group, Ellington AFB. Lower center: Maj. John M. Odiorne, director of operations, 64th FIS, Paine Field, Wash., congratulates Lt. Gerald S. Miller on flight that put him over 1,000-hour mark in F-102s. Lower right: Air National Guard readiness plaque is awarded 125th Fighter-Interceptor Group, Florida. From left: Lt. Col. Irving Wadlington, senior AF adviser; Col. Charles Riggie, Florida assistant adjutant general for air; Lt. Col. James Higgins, acting Florida Air National Guard commander; Lt. Col. John Taylor, 159th Fighter Interceptor Squadron commander.



VIP CLASS—American Airlines executives and managers line up beside Astrojet 990 on GD/Convair flight line during recent capsule briefing on Convair jetliner.

American Airlines Executives Attend 990 Familiarization

American Airlines executives were at San Diego the first of this month to get acquainted with the Convair 990.

A special two-day "capsule" familiarization was conducted by American Airlines training specialists from Tulsa, Okla. Besides an overall look at the jetliner, the 16-hour briefing concentrated on special features peculiar to the 990, said R. W. Bragg, manager of technical training services, at the GD/Convair plant to coordinate the sessions.

Included in the group attending were city managers from six cities throughout the United States which will be on the 990's schedule when it goes into service with American.

Key American Airlines men at the Dec. 7-8 briefing were W. B. Davis, vice president, maintenance planning and service engineering; N. S. Rice, director technical training and qualifications, both from Tulsa; F. J. Mullins, vice president, field activities, from New York City.

Other administrators were W. G. Conrad, vice president, Northern Group; R. F. Lambert, vice president, Southern Group; G. W. Shiles, vice president, Central Group, all headquartered at the New York City downtown office; W. H. Miller, vice president, New York Area, headquartered at LaGuardia airport; H. D. Silliman, vice president, Chicago Area, O'Hare airport.

City managers were B. J. Hugger, Cincinnati; R. K. Pfunder, St. Louis; R. Radcliffe, Dallas; J. A. Tompkins, Detroit; J. H. Woods, Boston; J. E. Gainer, Washington, D. C.

Technical training specialists doing the briefing were H. L. Patterson, K. W. Metzinger, J. P. D'Angeli.

Customer transport service personnel at GD/Convair assisted in arrangements during the group's stay.

SOCIAL SECURITY TAXES TO INCREASE FOR ALL IN 1962

General Dynamics Corporation employees everywhere will join other wage earners in paying higher Social Security taxes on wages earned during 1962.

Basically, the increase is from the 1961 rate of three per cent to the 1962 rate of three and one-eighth per cent. This applies to the first \$4,800 earned during the year. At the same time, General Dynamics' contribution per employee will increase by the same amount.

For those earning over \$4,800 the increase will be about \$6 for the year, from the present \$144 to \$150 per year. Deductions for Social Security purposes appear on payroll check stubs under the heading of "F.I.C.A."

Increased taxes make possible increased benefits which went into effect last August. They include earlier retirement for men; higher benefits for widows; increased income for those eligible for minimum benefits only; and the possibility of earning more after retirement while still drawing Social Security benefits.

Deductions under the program are automatic and require no action on the part of employees.

They Love it!

Smith Family Spans Country Responding to Astro Duties

PLATTSBURGH AFB—Probably one of GD/Astronautics' "most traveled" employees, and first to be assigned to Astro's operations here, is Robert C. Smith, complex supervisor.

His work with GD/Astro has kept the Smith family on the move almost constantly—and they love it.

Smith first joined GD/Convair in 1954, and after working on F-102 projects in San Diego, went to Moffett Field, near San Francisco, for wind tunnel tests on the F-106. In 1957, transfer to Astronautics' Atlas project sent the family to Cape Canaveral where he took part in the first launch of the ICBM.

His Florida experience made him a likely prospect for a move to Vandenberg (then Cook) AFB as the 12th Astro man assigned there. Here he scored another first by participating in the first operational Atlas launch in 1959.

The following year he led Astro work force assigned to Plattsburgh AFB, New York, and scored two other "firsts." Daughter Jennifer Mary was the first child born to an Astro employee here, and Smith was the first

launch complex supervisor to be appointed.

The Smith family now consists of his wife, Arline, and—besides Jennifer—daughters Loreen, 15, and Theresa, 11, and son Robert, 8. By coincidence all children are native-born New Yorkers.

"Travel is no hardship," Smith claims. "The youngsters have received an educational opportunity seldom available to those unable to move about the country, and each move has brought new challenges in my work."

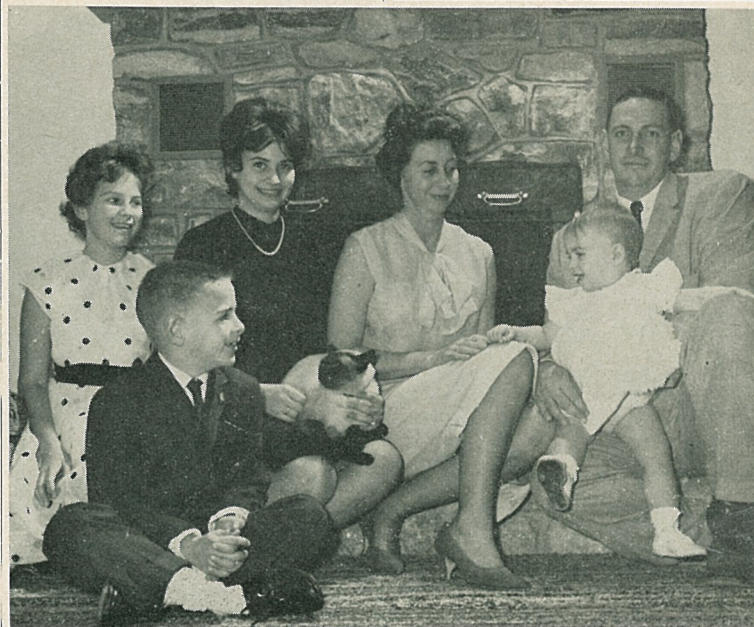
Travel has become a hard-to-break habit for the Smiths. They started their "moving business" even before Smith joined General Dynamics.

He previously spent 12 years in the Marine Corps—on the move.

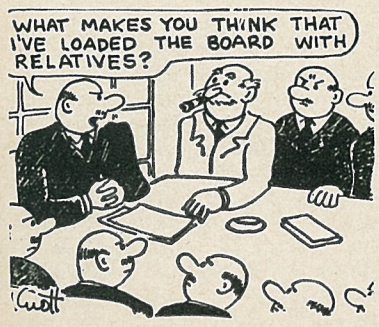
Harry Lyter, Former Convair Chief, Dies

Harry C. Lyter, 61, former chief of GD/Convair's fire department, died late last month in Tucson, Ariz. He had been ill for some time.

He headed the department for 16 years, prior to his retirement in 1959.



TRAVELING SMITHS—Shown at home in Plattsburgh, N.Y., are Theresa, Robert, Loreen, Mrs. Smith, Jennifer, and Robert C. Smith. Stone fireplace in background was built of rock excavated at 142-foot level from Plattsburgh AFB Atlas launch site.

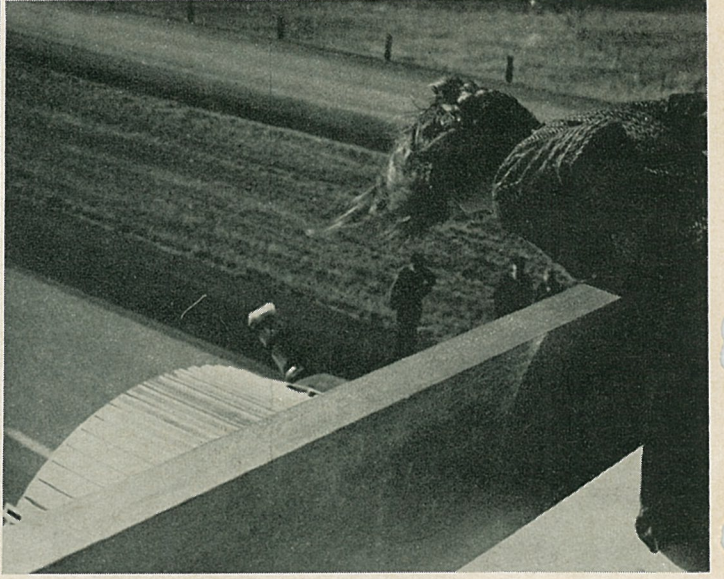




OFF-SITE SIDELIGHTS—In center, Air Force Secretary Eugene Zuckert receives model of Atlas missile from Cal Fowler, GD/Astro assistant operations manager assigned to Warren AFB. At left, Astro "natives" Bob Verdon and Alice Watters



at Warren entertain San Diego visitors John Morgan, Tom Jarrett, Charles Guy, Stan Flannell, Ernie Clay, Len Sabatka. In photo at right Astro's Carol Crow at Warren watches Atlas missile vanish beneath overpass.



Scale Miniatures

Passenger-Less Railway Trains Make Regular San Diego Runs

Although it has more "rolling stock" than any other line in the area, one San Diego railway system has never carried a passenger!

This is the elaborate "layout" operated by San Diego Model Railroad Club, to which GD/Astronautics and GD/Convair employees and adult members of their families may belong.

Subsidies from both ARA and CRA greatly reduce the cost of membership in the club, whose elaborate facilities—including over 1,750 feet of "main line" track—are located in Balboa Park's House of Charm at San Diego.

MULTI-WEAPON B-58 SHAKEDOWN

Shakedown flight for B-58 No. 42, recently converted to a multiple-weapon carrier, was to be made "sometime after mid-December."

The production Hustler will be used in a series of flights to test out airplane performance with its added underwing bomb load.

Ground vibration tests were carried out on No. 42 last month. A series of hook load tests was to follow.

Following initial flights out of Fort Worth, No. 42 and crew will move on to headquarters at Kirtland AFB, N. M. Most bomb drops are scheduled for White Sands Missile Range.

Preliminary testing of the new multiple-weapon configuration was carried out earlier this year on No. 59.

500 Sons, Daughters Attend Xmas Party

WALKER AFB—More than 500 sons and daughters of GD/Astronautics employees here were on hand Dec. 10 for a children's Christmas party staged under joint sponsorship of ARA and the Astro Wives.

Held at the Roswell Community Center, the party included games and treats for children.

ARA and CRA members may join for only \$10 in membership fees, and monthly dues of \$2. Normally the initiation fee is \$25.

About half the club's membership consists of GD/Astro or GD/Convair employees who take advantage of the lower rates to enjoy their hobby.

"These trains are not toys," Bill Worthington of Astro, past president, emphasized. "They are as near to scale miniatures as it is possible to make them."

The club layout includes HO and O-gauge systems, an HO₃ (narrow gauge) line, and a trolley line. Total length of combined track (including sidings, etc.) is estimated at over 7,000 feet.

"The hobby can be as expensive or inexpensive as the enthusiast cares to make it," Worthington explained. "Most people start with a ready-made train costing as little as \$10. From there, many like to build their own models, either from kits with varying degrees of complexity, or from 'scratch.'"

Members normally provide their own "rolling stock," and operate it on the club layout.

Club meetings are held every Friday evening in the House of Charm. First meeting of the month is devoted to HO-gauge operation; the second is a business session; the third is for O-gauge operation; and the fourth is a work night.

Club rooms are open for public visits Friday evenings, and on Sundays from 1 to 4:30 p.m.

"Because the trains and layout are quite valuable, we limit children's participation to sons (or daughters) of regular club members," Worthington said. "Club regulations set a minimum age of 21 for regular members."

Employees interested in modeling, railroads, or railroading—the subject often appeals strongly to students of recent history—have been urged to visit the Balboa Park layout, or contact club members for additional information.



HI THERE, SANTA!—Look what came down chimney at GD/Fort Worth Recreation Clubhouse with sleigh and gifts—a cute little "Santa Claus" named Donna Price, clerk in Dept. 24-7.

Bunker Hill Has 22 B-58s

Bunker Hill AFB counted 22 combat-ready B-58s on hand following delivery of production Hustlers 80, 86 and 87 in early December.

Deliveries to the SAC base in Indiana continued well on schedule, with Nos. 82 and 84 tentatively slated for delivery in December also.

Crewmen from 305th making acceptance flights were:

No. 80—Col. H. B. Robertson, pilot; Maj. G. G. Schutt, navigator-bombardier; and 1st Lt. J. J. Cappel, DSO.

No. 86—Maj. H. E. Flook, pilot; Capt. L. Broome, navigator-bombardier; and 1st Lt. C. R. Leonard, DSO.

No. 87—Maj. D. J. Younger, pilot; Capt. L. R. Friedman, navigator-bombardier; and Capt. R. E. Ost, DSO.

Rumbaugh Assigned To Centaur Position

W. H. Rumbaugh, veteran GD/Convair executive, has joined Astronautics as senior Centaur program administrator-operations, according to E. D. Bryant, vice president-operations.

Rumbaugh replaces J. L. Milhorn who has taken a new assignment with program planning and control.

Except for a two-year Navy hitch, Rumbaugh has worked for Convair since 1940, principally in field operations work both at San Diego and Palmdale during F-102/106 development.

By Short-wave

GD/Convair Ham Boosts Morale; Finds 'Relaxation' Satisfying

Boosting military morale by arranging radio-telephone connections for servicemen overseas with their families in the U.S. is the way a GD/Convair amateur radio operator "relaxes."

A. R. Lambert, chief of pre-design, took up "hamming" two years ago as an outlet for nervous energy.

"My wife suggested that I find a hobby to keep me out of her hair. . . . Now she complains that all she sees is the back of my head," Lambert explained.

Thus far, relaxation has consisted in transmitting over 2,000 calls from such far-flung spots on the map as Okinawa, Iwo Jima, Midway, Wake Island, and the South Pole.

Lambert, whose call is K6JLB, usually teams up with one of many amateur radio operators in the South Seas to help complete connections.

"Usually the other ham will

have five or ten servicemen waiting to speak with their families before I tune in on his frequency. We've managed to pretty well standardize times for our calls. After connection is made, I telephone wives, sweethearts, or families and complete the circle."

He has joined servicemen with families in 47 states.

In the past year, the stork has kept him hopping because he takes particular pleasure in connecting a mother who announces "first, second or tenth born" to a proud father.

Lambert, who also owns and operates a private teletype, said he once connected a new mother with her husband on Wake Island 30 minutes after the baby was born.

"All the area hospitals are more than cooperative in permitting the wife to speak with her distant husband, even at 2 in the morning."



MORALE BOOSTER—Seated amidst radio and teletype equipment, Art Lambert prepares to tune in Okinawa where he will connect with another ham to join servicemen on the island with their families in U.S. Lambert has transmitted over 2,000 such morale-boosting messages.

GD/Convair Instrumentation Specialists Write Section of Engineering Handbook

Three General Dynamics/Convair instrumentation experts have contributed to the "Shock and Vibration Handbook Library," published by McGraw-Hill Book Co., Inc.

J. J. Beckman, Richard D. Baxter, Harold A. Brown are authors of a section on "Measurement Techniques" in the three-volume series. Their material covers pre-test planning, selection of equipment, instrumentation installation, field checkouts and field calibration techniques.

At the time they were approached, over two years ago, to prepare the chapter, they were all in engineering flight test in-

strumentation. Now, Baxter has left the company and is presently responsible for instrumentation for NASA at Edwards AFB. Beckman is design specialist in new projects engineering; Brown is senior flight test instrumentation engineer on the 990 program.

The 50 chapters of the library were written by 72 authorities from industry, government laboratories, and universities. The books were four years in preparation. Co-editors are Cyril M. Harris, associate professor of electrical engineering at Columbia University, and Charles E. Crede, professor of mechanical engineering at California Institute of Technology.



CLEAR TRACKS—Don Taylor and ARA Commissioner Dave Fyffe are shown at one of several control stations on San Diego Model Railroad Club's layout in Balboa Park. ARA club has full use of park facilities, holds regular meetings there.

Teen-Age Business Enterprise 'Cleans Up' on Xmas Corsages

"Industrialites," teen-age business group sponsored by GD/Convair Management Club, is deep in production for holiday contracts.

The 19 high school boys and girls in the Junior Achievement group have already completed several hundred corsages for company Christmas affairs. They supplied 425 for the annual Management Club dance last weekend and 175 for the Rose Canyon holiday party.

They will move on into production of other products after the first of the year, said J. A. Giebe, JA board of control chairman for the Management Club.

They will be turning out shoe covers of the type used in the

company to protect wing surfaces on the assembly line. Later, they will make animal pincushions for general sale.

Directing the group are W. T. Toon, committee chairman; H. G. Barnes, A. J. Krumweide, and John Woodhead, advisers.

The GD/Convair Management Club also is underwriting overhaul cost of power equipment used by JA groups at the San Diego headquarters.

"Several of the machines, such as band saw, jig saw, drill presses, have been down due to lack of small, inexpensive parts," explained Giebe. "The Management Club is paying for the parts and Harold Washington, GD/Convair retiree, is volunteering his time for installation."

'Drive Dry!' Chief Safety Engineer Urges Drivers at Holiday Time

"Holidays are danger days," warns M. C. Val Dez, General Dynamics/Convair chief safety engineer, as thousands of General Dynamics people prepare for holiday trips over the next two long weekends.

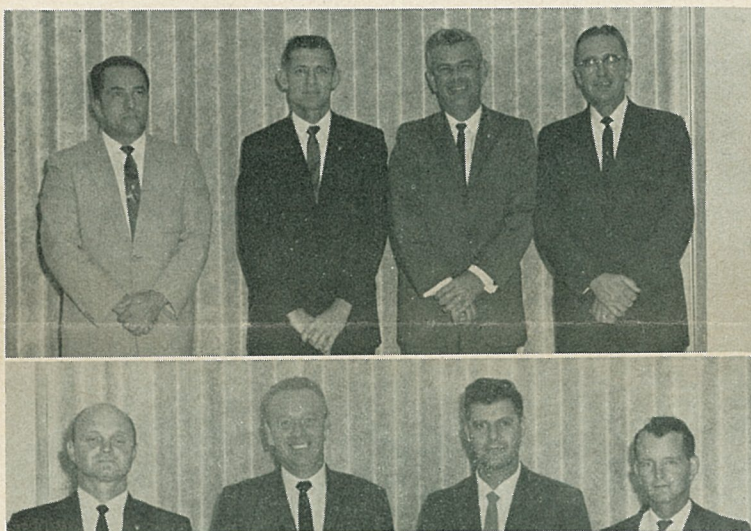
"December is always one of the deadliest traffic months of the year," he said. "Above all, drive dry—over half of Christmas traffic deaths involve drinking drivers."

"Drive safely—yield the right of way, keep at safe distances, travel at safe speeds, and signal properly."

"As an extra safeguard, use safety belts."

Safety belts are still on sale at both Plant 1 and Plant 2 safety cribs at \$6.25 per set.

Plant 1 safety crib is open 7 a.m. to 6:30 p.m.; Plant 2, 9 a.m.-5:30 p.m. Both are closed during 12-12:30 p.m. lunch hour.



AFMTC CLUBMEN—In upper photo are new officers of GD/Astro Management Club at Cape Canaveral. From left, they are Ken McCarthy, 2nd vice president; John Riels, secretary; John Hughes, president; and Robert Flanagan, 1st vice president. Below are new members of board of directors, R. D. Beasley, L. I. Fraunfelder, D. M. Maximovich, W. H. Baker.

AF Officer in Training at GD/Convair Receives Outstanding Service Citation

Capt. David L. Keller, now assigned to General Dynamics/Convair under the Air Force Education-with-Industry program, was awarded the AF Commendation Medal last month.

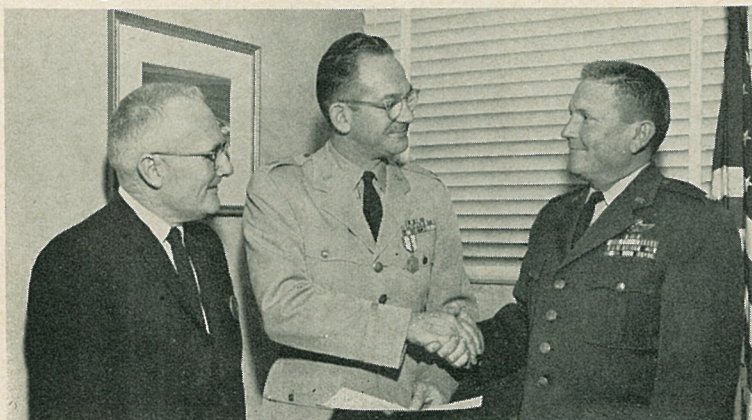
Presentation was made Nov. 17 by Lt. Col. C. W. Atterholt, chief of San Diego Air Procurement District, former AF plant representative at GD/Convair.

Captain Keller was cited for meritorious service while serving as OIC of the Tanker Maintenance Branch and Supervisor of Maintenance of the Organizational Maintenance Squadron, and Job Control Officer of 11th Bombardment Wing, Altus AFB, Okla. He was stationed there from September, 1958, to June

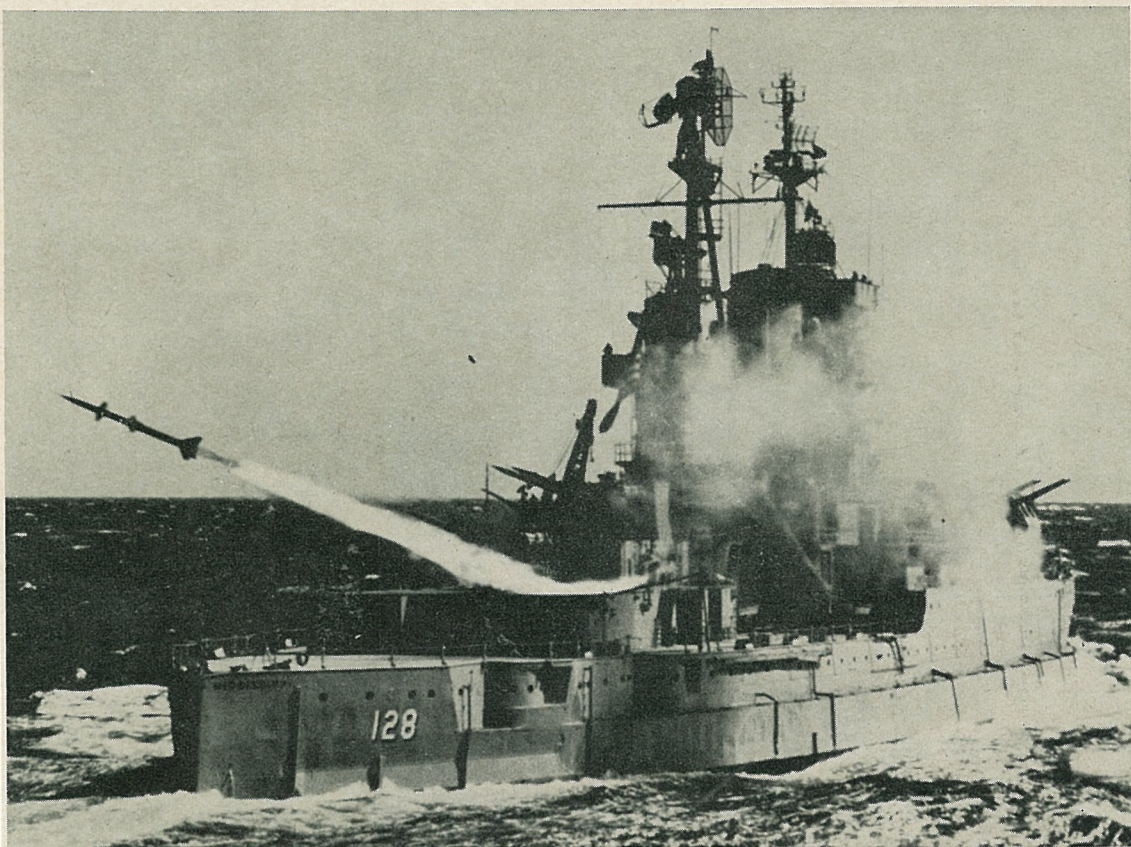
of this year.

The citation read, "Captain Keller demonstrated an outstanding ability in planning, scheduling and controlling aircraft maintenance functions and all related activities. The keen foresight, devotion to duty and aggressive action displayed by Captain Keller reflect great credit upon himself and the United States Air Force."

Capt. Keller and Capt. Dewey K. K. Lowe reported at GD/Convair plant in September of this year for the 12-month AF training program. The program, concentrated on industrial planning and procurement operations on an executive level, is coordinated by educational services.



CITED—Capt. David L. Keller (center), AF officer in training at GD/Convair, receives AF award from Lt. Col. C. W. Atterholt. At left is R. H. Nall of GD/Convair educational services.



EARLY PHOTO—Released in 1955, this was among first photos shown publicly of Terrier missile. It is taking off from deck of converted battleship USS Mississippi.

Commercial Submarines Held Feasible

NEW YORK, N.Y. — Commercial submarines and underwater tankers today "are technically quite feasible" and at higher speeds will be more efficient than surface vessels, according to a top nuclear submarine research engineer.

Dr. H. E. Sheets, chief research and development engineer of General Dynamics Corporation's Electric Boat Division, told the American Society of Mechanical Engineers annual meeting here that underwater vehicles are needed for transport and to explore and exploit the full potential of the oceans.

"The greatest commercial incentive for submarines at this time would appear to be their use on special routes where surface ships cannot be used, such as under the Arctic, resulting in considerable savings," Dr. Sheets said.

"In other cases, high-speed requirements may prove the submarine the most economical transport. Submarines may also be required for access to under-sea resources."

Dr. Sheets indicated that marine cargo in the future might be carried in several different ways. For certain medium values of the speed-to-displacement ratios, he said, the submarine is the most economic means of sea transport. The surface ship would remain more economic for handling bulk loads.

Electric Boat Orders Big Dock

A graving dock, capable of drydocking the Navy's largest nuclear submarines, will be built at General Dynamics/Electric Boat, Groton, Conn.

Plans call for the new facility to extend 512 feet into the Thames River, angling out in a southwesterly direction from the Groton shore. The dock itself will be 70 feet wide with a 35-foot draft at mean low tide.

With a capability of 12,000 tons, it will be capable of handling any existing nuclear submarine. Electric Boat is currently building seven ships of a new class of Polaris-firing nuclear submarine, which, with a 7,000-ton displacement, will be the heaviest undersea craft built.

The dock will be flooded by opening a gate at the west end and drained by two 30,000 gallons-per-minute pumps.

Construction is expected to take a year.

Terrier 'Won Spurs' in '53 By Knocking Down Drone

(Following is No. 74 installment in continuing history of General Dynamics products. It deals with early development of Terrier missile, currently primary air defense for 26 Navy warships.)

Design of the prototype Terrier was finished early in 1949 at San Diego where Vultee Field projects had been transferred in 1947.

Additional requirements were cranked into a series of five small production lots over the next four years while an extensive program of flight testing was carried out.

Starting in 1950, simulated shipboard equipment at NOTS—Inyokern was used. Other flight testing was conducted aboard the laboratory ship USS Norton Sound after September, 1951, and by Operation Development Force in the Atlantic, 1952-53.

Terrier came of age Aug. 12, 1953, when the test ship, USS Mississippi, launched a full-con-

figuration missile equipped only with smoke-puff warhead and knocked down a high-flying F6F drone.

Preparations to make the missile operational had been foreseen earlier by the Navy when personnel were assigned to engineering at San Diego in 1950.

Formal courses in theory and operations were started in 1951 with first graduates organized into Guided Missile Unit 21 (assigned to Mississippi) and GMU 23 (Norton Sound). The Navy missile school at Pomona was activated early in 1953 to offer a 24-week course.

Currently, two heavy cruisers, the USS Boston (CAG-1) and USS Canberra (CAG-2), were converted in late 1955 and early 1956 as the Navy's first Terrier launchers.

Both cruisers had the aft 8-inch turrets removed, twin launchers installed, added below-decks storage, servicing and loading equipment, and special search and guidance systems as part of the conversions.

Terrier I (XSAM N-7) was a needle-nosed missile 11.4 ft. long and 10 inches in diameter, powered with a solid propellant rocket motor using a beam riding guidance system. Main control surfaces were 12-inch cruciform "wings" near the midpoint of the missile body. In launching, the Terrier was mounted atop a solid-propellant booster rocket section that fell away in flight.

F-102 Squadron Safety Leader

An F-102-equipped fighter squadron has won the PACAF Tactical Unit Flying Safety Award for keeping its planes in the air an entire year without an accident.

The 509th FIS, based at Clark Air Base, Philippines, flew over 7,000 hours in F-102s for a twelve-month period ending September, 1961, to win the flight safety award.

In presenting the plaque, Maj. Gen. Chester W. Cecil, Deputy Chief of Staff for Administration and Logistics at PACAF Headquarters, said: "This award reflects not only an outstanding record in flight safety, but also indicates sound maintenance support and operational ability."

Lt. Col. Russell D. DeMont, 509th commander, praised the entire squadron for its performance, "My heartfelt thanks goes to every man who works on the F-102 at Clark."

GD/Convair field service representative with the F-102 squadron is W. C. Butterfield.

NEWS Issue of Jan. 3 Will Reduce in Size

Due to year-end holidays which cut into production time, the next issue of General Dynamics NEWS (Jan. 3) will have fewer pages than usual and a single edition will be published. No recreation news can be carried.

The regular eight-page, multi-edition paper will resume with the Jan. 17 issue.



RECLAIMED—H. P. Williams, value control manager, and Dale Marks, chief of manufacturing support and products, discover discarded broom, worth \$4, which with a \$1 handle can be put back into use.

Cost Analysts Cover GD/Convair In Conservation Campaigning

General Dynamics / Convair's year-end conservation campaign was rolling as it reached mid-point last week.

Cost reduction analysts fanned over all of GD/Convair the first of last week to begin their ten days of roving inspection. The plant has been divided into seven areas: five within Plant 1, one at Plant 2; all of the off-site locations including Rose Canyon, ramp, gun butts, and Bldg. 43 making up the seventh.

Analysts assigned to the various sections consult with department heads on what steps have been taken, if monitors have been named to survey clean-up activities, and assist in every way possible.

Racks, bins, files were coming under close scrutiny. Tubs full of tools, bucking bars, production materials of all types were stacking up at Bldg. 1 tool services. V. P. Mavrinac, tool manufacturing foreman, said it was coming in so fast he could use more hands to put items back on shelves for reissue.

Strange articles were turning up. Obsolete production tools for projects long gone have been unearthed. For example, a couple of tube bending mandrels used during PBV days were found hopelessly tucked away for future use when Dept. 116 cleared its shelves.

Photogs Give Two Top Camera Awards

Ron Ainsworth and Leo Vigneault won top honors for their photographic entries during the year at CRA Camera Club's December meeting.

Ainsworth (Dept. 144) was tabbed winner for best black and white print; Vigneault (husband of Aline, Dept. 16-7), for best color slide of the year.

Next meeting of the group will be Jan. 8. The regular fourth Monday meeting, which would have fallen on Christmas Day, has been cancelled.

San Diego Stereo Photo Club will present a color 3-D slide show. Featured guest will be Fred Lynns, who has been honored as San Diego's top 3-D photographer this year.

Meeting time is 7:30 p.m., Photo Arts Bldg., Balboa Park.

Even cost reduction section, spearheading the drive, is practicing what it preaches. Three file cases no longer needed have been turned back into office supplies.

Demand for the green and red conservation calendars wiped out the first supply, said C. H. Hahn, cost reduction supervisor. A second lot of the calendars listing housecleaning steps has been distributed.

A complete report on material reclaimed and dollar value of savings will be compiled at the close of the current drive this month.

Mgt. Club Plans \$2,400 Awards

Scholarships, valued at \$2,400, will be awarded by GD/Convair Management Club in 1962, Keith Blair, committee chairman, announced this week.

Sons and daughters of employees of the Corporate office at San Diego, and employees of GD/Convair, are eligible. The awards are for students entering college in 1962. They will be made on a basis of high school grade-point averages, aptitude and extra-curricular activities. Two winners receive \$1,000 each, and four runners-up each receive \$100 U. S. Savings Bonds.

Application procedure and full details will be made available early next year.

Holiday Film Dates Released by Theater

Bookings at the Adams Theater over the next two weekends are:

Dec. 22, 23, 24, 25 — "Come September," with Rock Hudson, Gina Lollobrigida, Sandra Dee; and "The Last Sunset," with Rock Hudson, Kirk Douglas, Dorothy Malone.

Dec. 27—Special children's New Year show.

Dec. 28, 29, 30, 31, Jan. 1 — "Guns of Navarone," starring Gregory Peck, David Niven, and "A Thunder of Drums," with Richard Boone, George Hamilton.

OSCAR Orbits With 'Hams' In Front Seat

OSCAR, the first orbital satellite "tuned in" for amateur radio frequencies, hijacked its way into space recently on the back of a Discoverer with GD/Convair's Radio Club in the front seat . . . by radio.

Fired Dec. 12 from Vandenberg AFB, OSCAR (Orbiting Satellite Carrying Amateur Radio) has been telling the world "Hi" by way of a two-meter transmitter since its early separation from Discoverer.

A two-meter converter will enable GD/Convair hams to return OSCAR's greeting.

First built by a group of enthusiastic amateur radio operators, OSCAR will send its four dots and two dots (international Morse code for "Hi") until its batteries wear down, Jim Lack, CRA commissioner, said.

Persons who would like to take part in Project OSCAR with the Radio Club or from their home QTH should attend the club's meeting, Dec. 21, 8 p.m., Radio Club headquarters, Harbor Drive.

Fencers to Eat Turkey Dinner

Convair Fencing Club, a joint ARA-CRA activity, will honor club officers and members who "most benefited fencing during 1961" at a turkey dinner tonight (Dec. 20).

Guests in the home of CRA Commissioner Pete Beyrer will include Ray McNamara, club president; Barbara Proppe, GD/Astro daughter, in charge of club equipment procurement; Mike Hurley, ARA commissioner; two club members; and the Beyrer and McNamara families.

For the second consecutive year the club was host at the San Diego Invitational Fencing Tournament at the downtown YWCA, Dec. 17.

Competition in men's and women's foil pitted more than 50 contestants, with final rounds fenced with electrical weapons.

In an intermediate epee tournament sponsored by the club earlier this month, men fencers from four local clubs took part. The event was won by ARA Commissioner Hurley.

Xmas Chow Problem? Enter Modeler Shoot

GD/Convair's Aeromodelers, hoping to solve their Christmas dinner problems, will converge on Hourglass Field Saturday (Dec. 23) for the club's annual turkey shoot.

Events will get under way at 7:30 a.m. with everyone welcome to attend, Don Larsen, president, said.

Competition will include hand-launch gliders, tow-line gliders, 1/2 A/A/B/C gas-power free - flights, wakefield-rubber and unlimited-rubber.

Larsen said high times in only one event will be counted, but any number of events can be entered.

Four Pistol Marksmen Chosen to Shoot For CRA

Four top marksmen of GD/Convair's Pistol Club won spots on the team which will represent the CRA group in competitive meets during the next three months.

Team members, determined by their high aggregate scores fired in Short National matches during the last three months, are: Jim Halfacre (Dept. 180), aggregate score, 785; Vern Mardis (Dept. 34), 783; Ernie Bickar (Dept. 215), 783; Carl Hornburg (Dept. 139), 774. Mardis rated second high-scorer on the team with his 8 bull's-eyes. Bickar had 7.

In Dec. 10 shooting, Joe Williamson (Dept. 401-5), scored

291 to take the master class in the .22-cal. Police Course.

Halfacre was second with 288; Mardis, third, with 287.

Bickar was first in expert class with 277 and 6 Xs; Ralph Picard (GD/Electronics Dept. 6), second with the same score and 3Xs; Bill Dittmann (Dept. 6), third, 274.

Harvey Ingalls (Advanced Products, Dept. 986-1) won sharpshooter class with 248. Warren Grimmett (Dept. 48-93) was runner-up with 219.

Hornburg stood on top in .45-caliber Short National results with a 260 score; Bickar scored second with 252.

Regular match, which normally would have been scheduled this Sunday (Dec. 24), will be cancelled, said CRA Commissioner Ash Bishop. Next Pistol Club meet will be Jan. 14.

TOP CLUB POSITIONS FALL TO GD MODELERS

General Dynamics model railroaders swept the Dec. 8 election of San Diego Model Railroad Club, with which both Convair and Astro groups are affiliated.

Karl Busch, GD/Convair Dept. 15-6, succeeded Bill Worthington of Astro photo lab, as president. This is Busch's third term as club president. He also is editor of the National Model Railroad Association Bulletin.

George Overlin, GD/Convair Dept. 48-34, was seated as treasurer; Bob Durnell (GD/Electronics, Dept. 5), secretary.

Serving on the board of directors will be Worthington; Ken Pauley (Dept. 31), past treasurer; George French (Dept. 6); James Hamill (GD/E Dept. 5); John Pinson (GD/Convair Dept. 201).

Highlight of the Friday meeting in Balboa Park's House of Charm was a birthday party honoring Astro Commissioner Dave Fyffe.

First Swim Night Slated for Jan. 6

First free swim night of the year for GD/Convair families has been scheduled at the Mission Beach Plunge Jan. 6, 7-9 p.m.

Tickets will be available to employees and their families Dec. 27, employee services, Bldg. 32, Plant 1.

Following the opener, regular swim nights will be held the first Saturday of each month.

Pete Beyrer, spokesman, said the plunge is now entirely fresh water and kept at about 80 degrees temperature.

"It is well supervised with lifeguards on duty every minute," Beyrer said.

The plunge is the largest indoor swimming pool in Southern California, Beyrer commented.



GIFT — GD/Convair people based at Holloman AFB, N.M., donate \$1,000 to Lt. Col. E. F. Bonvicin, base chairman of Otero County United Fund drive. Presenting check is Mrs. Sluyter, Con-Trib committee member. Others are M. H. Emerson, Mrs. Britton, M. C. Dana, Mrs. Jackson, and F. E. Roeder of industrial relations.

Golf Schedule For Year

(It is suggested that Convair golfers clip this schedule for future reference.)

* * *

Jan. 6-7, Fletcher Hills (formerly Flying Hills).

Feb. 10-11, Coronado.

March 3-4, Circle R.

April 7-8, 14-15, Yater Memorial, Fletcher Hills.

May: Reserved for Industrial Recreation Association championships.

June: To be scheduled.

July 14-15, Circle R.

Aug. 4-5, Coronado.

Sept. 8, 15 and 22, plant championship, Fletcher Hills.

Oct. 6-7, Circle R.

Nov. 10-11, To be scheduled.

Dec. 8-9, Coronado.

Note: CRA players must compete in two of first three (January, February, March) tournaments to qualify for Convair inter-plant matches tentatively scheduled in May and June. It is also required that golfers play in at least three of the monthly tournaments during 1962 to compete in the plant championship in September.



ON PARADE—Junior riders of GD/Convair's Riding Club line up for cameraman's inspection at recent gathering of both juniors and seniors. Club spokesman Tommy Thomason said next meeting will be held Jan. 4 at Gillespie Field Clubhouse. Events for 1962 will be discussed.



HONORS FOR CRA—GD/Convair President J. H. Famme and GD/Electronics San Diego General Manager William Lawrence were among those paying tribute to CRA Council last week at annual banquet. Center photo, from left: Mr. and Mrs. Paul Pearson, Mr. and Mrs. Famme, Lawrence, Dick Wilkens, Joe Harris, Betty Jean

Shelton. Photo at right: Mrs. J. K. Field, W. D. Reed, Mrs. Eric Johnson, A. R. Johnson and Mrs. Johnson, Eric Johnson, Mrs. Reed, Field. Photo at left: Mr. and Mrs. R. C. Smith, Mr. and Mrs. H. L. Gates, Dr. and Mrs. D. Wahl, Mr. and Mrs. H. C. Howe, Mr. and Mrs. J. P. Syren. (Standing is William Lawrence.)

CRA Calendar

(Convair Recreation Association has some 40 activities in operation. For information on Convair sports, call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

AEROMODELERS — Turkey shoot Dec. 23 Hourglass Field, starting time, 7:30 a.m.

BOWLING — Spots open on CRA leagues now bowling. Call Jim Hayman, ext. 1155, Plant 1.

BRIDGE — Weekly sessions each Tuesday, 7:30 p.m., Barcelona Hotel, 326 Juniper St.

CAMERA CLUB — Dec. 25 meeting cancelled. Next meeting Jan. 8, 7:30 p.m., Photo Arts Bldg., Balboa Park.

COIN CLUB—Election, Christmas meeting tomorrow (Dec. 21), 7:30 p.m., Convair executive dining room.

FENCING—Workouts and instruction each Friday night, 7-10 p.m., YWCA, Tenth and C Sts.

GARDEN CLUB—Next meeting Jan. 10, Floral Assoc. Bldg., Balboa Park, 7:30 p.m.

GOLF—Entries open for Jan. 6-7 tourney, Fletcher Hills course. Call ext. 1705, Plant 1.

ICE SKATING—Skating sessions each Thursday, Iceland, 6055 Lake Murray Blvd., 6:30-8 p.m.

JUDO—Instruction each Thursday, 7 p.m., CRA Clubhouse.

MOVIES—Reduced price movies each Friday, Saturday, Sunday at Adams Theater, 3325 Adams Ave. Admission: adults, 50¢; children under 12 free if accompanied by adult.

PISTOL CLUB—Dec. 24 match cancelled. Next shoot Jan. 14, 9 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave., 9 a.m.

RADIO CLUB — Meeting tomorrow (Dec. 21), 8 p.m., Harbor Drive headquarters.

RIDING CLUB—Next meeting Jan. 4, Gillespie Field Clubhouse, 8 p.m.

ROAD RUNNERS — Holiday trip, Dec. 29-Jan. 2, to Imperial Valley area.

ROCKHOUNDS—Annual New Year's field trip, Dec. 30-Jan. 2, to Mojave Desert. Call Dan Whorton, ext. 426, Plant 1, for information.

ROLLER SKATING—Convair night Jan. 15, Skateland, Front and G Sts., 6:30-9:30 p.m. Tickets at employee services.

SQUARE DANCING—Christmas party Dec. 21, 8 p.m., American Legion Hall, 4061 Fairmount Ave. Classes cancelled through holidays. Start again Jan. 4.

SWIMMING — Free family swim night Jan. 6 at Mission Beach Plunge, 7-9 p.m. Tickets will be at employee services and in hands of department representatives Dec. 27.

Gems at Gem Hill Rockhounds' Goal

CRA Rockhounds are looking forward to their annual New Year's field trip that take them into the desert over the holiday weekend, Dec. 30-Jan. 2.

They will travel to Gem Hill near Rosamond in the Mojave Desert searching for specimens. CRA Commissioner Dan Whorton can be contacted at ext. 426, Plant 1, for details of the trip.

The Rockhound Shack closed today for duration of the holiday period. It will reopen Jan. 9.

Sports & Recreation



CHARM "GRADUATES"—General Dynamics girls at final session of recent IRC beginning charm school get tips on decorative highlights from instructor, Edith Antelline, at far right. Around table from left are Barbara Heubner and Mildred Showers, both GD/Convair; Marie Gandy, Information Technology of GD/Electronics; Dorothy Banigan, Advanced Products; Juliet Allen of Info Tech.

IRC Charm School Graduates Finish Dec. 7 at GD/Convair

Seventeen General Dynamics women were among 57 completing a beginning charm course sponsored for company members of Industrial Recreation Council.

Nine San Diego companies participated in the six-week course ending Dec. 7. Mrs. Edith Antelline, San Diego charm school instructor, conducted the evening classes in GD/Convair's cafeteria. Arrangements were coordinated by Martha Woodberry, CRA commissioner of women's activities.

ROAD RUNNERS HEAD EAST FOR HOLIDAYS

A five-day junket into the interior of Imperial County will kick off the new year for GD/Convair's most widely traveled club—the Road Runners.

Departure from San Diego is slated for Dec. 29 with return scheduled on Jan. 2.

While New Year's will be celebrated "abroad," Road Runners stayed home for their annual Christmas party Dec. 16. Highlighting the evening was a visit by Santa, group Christmas carol singing and a grab-bag drawing.

In other traveling activity, the Road Runners spent a "muddy" weekend early in December at Otay Lakes County Park but overcame mother nature by singing, socializing and gaming.

Boxing Tickets Net Employees Reduction

Exchange tickets for Federal Amateur Club boxing matches may be picked up at GD/Convair employee services, Bldg. 32, Plant 1.

When presented at the Coliseum box office, 15th and E Sts., they are worth 25 cents on general admission and 50 cents on ringside seats.

Big Game Drawing Attracts 175; Larry Thrall Wins Remington Rifle

Over 175 enthusiastic hunters and guests were on hand Dec. 9 to see Larry Thrall, husband of Evelyne, GD/Convair Dept. 3-2, walk away grand prize winner at the Gun Club's annual "Big Game" drawing.

Thrall, who had a choice of a Winchester shotgun or Remington automatic rifle, decided on the rifle.

Staged at Gillespie Field Clubhouse, Commissioner Jack Swank said more than 100 hunters entered their "kills" in the contest. Awards were given by means of a drawing.

Thrall bagged a 165-pound buck in Utah which he had his wife enter in the contest.

Talks by county fish and game officials and a night-trap shooting exhibition highlighted the

evening's festivities.

Other prize winners from GD/Convair included C. L. Weathers, hunting book; Doyle Hayworth, gloves; E. E. Carpenter, cooking kit and lantern; Joe Williamson, canteen; K. F. Jones, mittens; Bill McColley, wool socks; R. D. Marks, first aid kit; Bob Osborne, tenderizer; and A. G. Helbig, cuff links.

GD/Astro hunters who nailed a prize were: W. C. Jungemann, axe and buck hunting coat; Dean Hotell, wool socks; and R. L. Hawkins, gas can.

Santa Joins Riders For Xmas Gathering

Decked in 10-gallon hats and riding boots, GD/Convair's Riding Club turned out in force Dec. 2 to eat turkey, sing Christmas carols and dance to the music of Roy Wilson's band.

Old St. Nick turned up during the evening and promptly distributed gifts and then joined in the festivities. Decorations were provided by the club women.

Next meeting will be held Jan. 4, Gillespie Field Clubhouse, 8 p.m.

Tommy Thomason, club spokesman, said party movies will be shown and the new year's bill of activities discussed.

CRA Bowling Slots Open for Keglers

Team slots are open for keggers who failed to join one of many CRA bowling groups at the season's beginning, according to Jim Hayman, commissioner.

Bowling enthusiasts who would like to participate in league action should call Hayman, ext. 1155, Plant 1.

"Our former waiting list is obsolete which means all prospective bowlers, whether they had signed previously or not, should call me," Hayman commented.

missioner of women's activities.

Besides GD/Convair, GD/Electronics, and Advanced Products women, others represented Pacific Telephone, Naval Air Station, San Diego Gas and Electric Co., YWCA, Naval Supply, Naval Hospital, Kintel, and Non-Linear Systems.

Evening classes covered such subjects as nutrition, grooming, figure control, visual poise, make-up and hairstyling techniques, voice and etiquette, apparel.

Next beginning charm school will be scheduled to open the latter part of January, said Mrs. Woodberry. Underwritten by CRA, it will be offered all General Dynamics women and wives at a greatly reduced price.

Applications can be made now at employee services, Bldg. 32, Plant 1, ext. 1245.

Hoedowner Holidays Swing, Not 'Twist'

GD/Convair's Hoedowners and square dancing class swing—western style that is—into the holiday season tomorrow (Dec. 21) with their annual Christmas party.

Slated for American Legion Hall, 4061 Fairmount Ave., squares will form at 8 p.m.

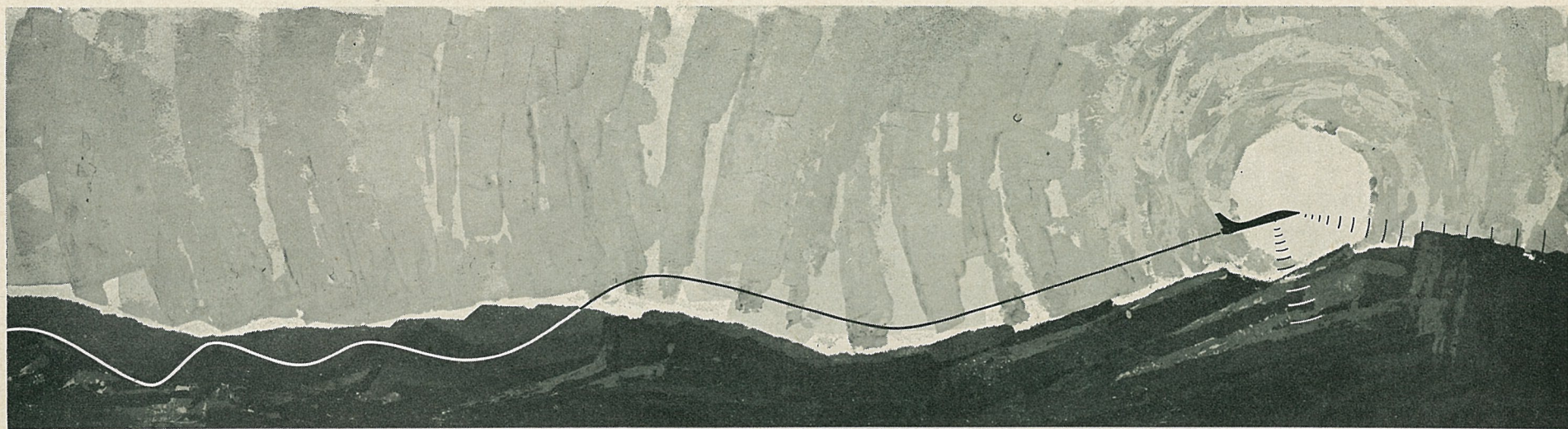
CRA Commissioner Maury Scholz said night's activities will include a visit by Santa, gift exchange and surprise-filled stockings for the kids.

Scholz said the regular fourth Saturday night dance (Dec. 23) and the advanced class on Jan. 2 will be cancelled due to holidays.

Sessions will resume on Jan. 4. Scholz reminded members who have dropped that they are eligible to rejoin the intermediate class.



SANTA'S HELPERS—Dancer and Prancer took a powder last week when this lovely quintet of General Dynamics secretaries showed up to "help" St. Nick (Bill Rickman, Prophet Co. manager) in front of CRA Clubhouse. Perched on Santa's knee are left, Jean Gates, GD/Convair, and Betty Freeby, GD/Electronics. Standing (l-r), Dian Gibson, GD/Convair, Valerie Gregory, GD/Astro and Betty Ann Wood, GD/Convair.



FLYING LOW—Sketch illustrates speedy low-flying plane holding direct flight path safe distance above all obstacles with GD/Electronics-developed system. Non-

scanning antenna is "brain" of simplified electronic system designed primarily for military craft.

'Ground-Hugging' Planes Guided Over Obstacles by GD/E Device

A refined electronic flight system to guide low-flying planes safely over surface obstacles has been designed and developed by General Dynamics/Electronics Division at San Diego.

The "terrain avoidance system," as it is termed, permits "ground-hugging" flight with a safe distance maintained at all times above anything beneath. Thus, a craft can be kept on its flight path even though flying over mountain ranges, tall buildings, high-tension lines.

The simplified GD/Electronics system is designed primarily for military aircraft, explained J. E. Bowen, GD/Electronics product manager of airborne radar and terrain avoidance. However, it can be adapted for commercial use, he said.

"It will be most valuable to high-speed military planes required to fly at extremely low altitudes of a few hundred feet to avoid enemy radar and surface-to-air missiles," Bowen continued. "Also, the system can guide the pilot in foul weather landings and takeoffs, during night missions, or over unfamiliar terrain."

Personnel Officers Hear Magers of FW

E. L. Magers of GD/Fort Worth's Dept. 3 addressed the annual Conference of Systems Personnel Officers of the University of Texas and its branches recently.

Bowen heads a team of marketing specialists presently contacting various branches of the military in a sales effort which would allow full-scale production of the new electronics system.

A flyable system now is being fabricated as a development model for demonstration, said J. L. Brooks, chief engineer for airborne radar, responsible for the system's development. It is due for flight test in early 1962.

Heart of GD/Electronics' terrain avoidance system is a non-scanning antenna, eliminating complex mechanisms and computations, explained Roger Olson, systems engineer in charge of the project during its later stages.

Entire system consists of a forward-looking radar, radio altimeter, electronic analog computer which provides either a pilot display or automatic control.

Electronic components are housed in aluminum pods, approximately 14 inches in diameter and six feet long. One pod is positioned on the underside of each wing.

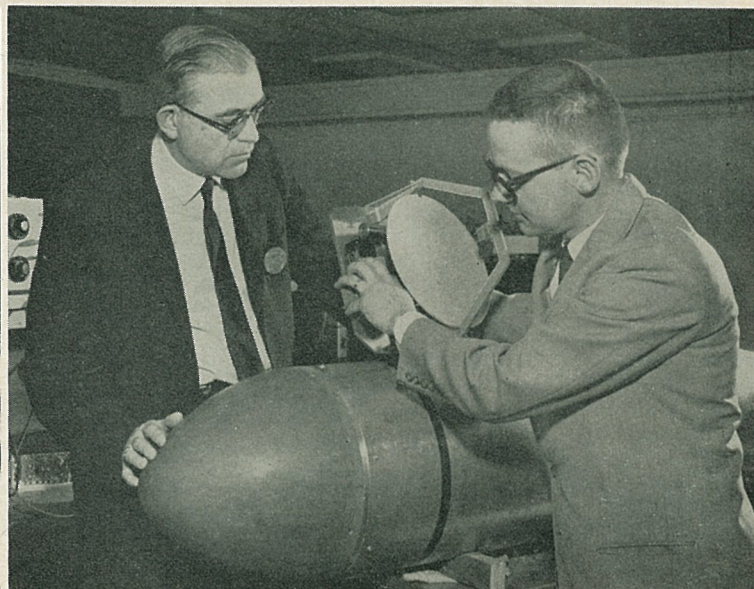
"The system will enable a high-speed craft to fly safely at very low altitude," said Olson. "However, mission requirements and type of terrain will dictate the height the pilot chooses to maintain above the ground."

"The system is now ready to go on present high-speed craft, but looking to the future, it

will perform equally well on planes not yet built, which will fly supersonically at low altitudes."

First studies on such an obstacle avoidance system began several years ago within the former electronics engineering section of GD/Convair. Present project which culminated in a workable system this fall, was initiated within GD/Electronics.

Team assigned to development and fabrication includes James Boelens, detectors and automatic gain control circuits; Mitsuo Ishihara, computer, indicator, and power supplies; Steven Molnar, microwave; James Williams, antenna; Fred Knight, servos and transducers; MacDonald Nelson, mechanical design.



NEW CONCEPT—J. L. Brooks, GD/Electronics-San Diego chief engineer for airborne radar, and Roger Olson, systems engineer, examine antenna of recently-developed terrain avoidance system. Note aluminum pod to house GD/Electronics flight system.

Do You Hear Me?

System For Voice Warnings To Pilot Introduced in B-58

A dulcet female voice breaks the silence of a B-58 pilot's cockpit to announce: "Left manifold pressure low."

The tape-recorded message continues at intervals until either the pilot makes an adjustment or the situation corrects itself.

Twenty such "caution messages," connected to 50 inputs from vital areas in the B-58, form the Hustler's new voice warning system (VWS). The system supplements the airplane's existing light warning system, conveying the warning vocally instead of visually.

Purpose of the new system, slated for installation on production Hustler No. 103 and on, is to shorten the pilot's reaction time to existing problems.

"Lights which warn the pilot of an existing problem in from 30 to 40 areas appear on a panel to the pilot's right," explained W. L. Gappa, senior aerosystems engineer. "A master caution light on the center panel directly in front of the pilot also comes on whenever warning occurs."

"The voice warning will simply supplement these existing warning devices. We know that in some cases, especially when the pilot is concentrating on some particular phase of flying, he might well hear the voice before he sees the lights."

If the pilot hears the voice warning, "Left manifold pressure low," for example, before seeing the warning light, he might save precious seconds in taking corrective action. Seconds can be crucial when the plane is traveling supersonically.

Messages are recorded in priority order, from 1 through 20. After hearing a message, the pilot may override to get the next voice warning on the list—if there is one. Otherwise, the message will continue until the problem is corrected.

Time required for the voice to "come on" after the system detects trouble is about a half second. In most instances, light and voice warnings—for all practical purposes—come at the same time.

All three stations in the B-58 receive the same message.

The VWS works at any altitude. A "landing gear unsafe" voice warning, for instance, will come on if the pilot cuts his speed too low on landing, or if he's flying too fast after takeoff with landing gear down.

Nerve center of the VWS, which uses the same switches as the light warning system, is an electronic black box about 10 by 6 inches in size.

"But the two systems operate independently," Gappa said. "If something goes wrong with one, the other will keep operating."

Nortronics Division of Northrop Corp. built the system to GD/Fort Worth specifications. They also supplied the female voice which may or may not be standard usage for subsequent messages.

J. V. Crotty, GD/Fort Worth assistant project engineer in charge of the program, recently demonstrated the system for Air Force representatives at Hawthorne, Calif.

Low-Level Pod Drop Scheduled Over Tonopah

Hustler No. 4 was to make a low-level pod drop over Tonopah Test Range this month, then fly home for Christmas.

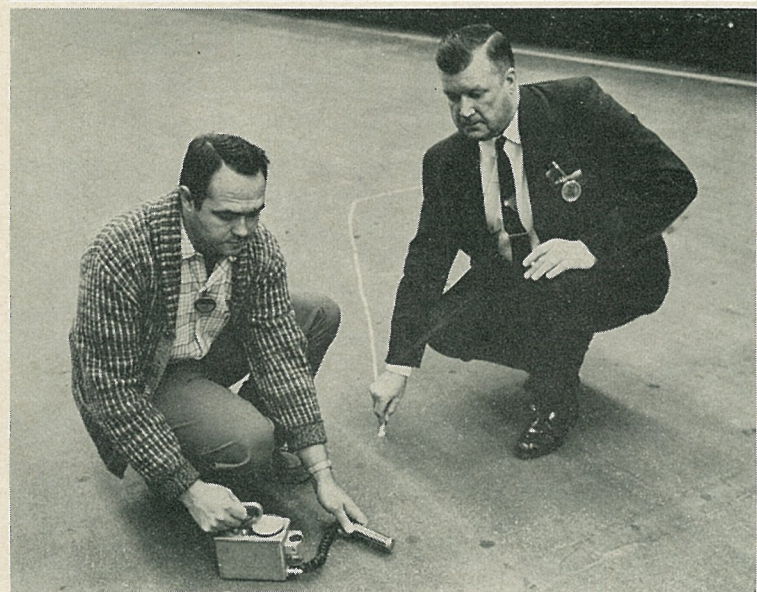
Returning for a brief period from flight headquarters at Kirtland AFB are crewmen Earl Guthrie, pilot, Grover Tate, bombardier-navigator, and O. D. Lively, DSO.

No. 4 was scheduled to make several drops, winding up its part in the two-component pod-drop program this year.

Inclement weather caused several flight postponements for No. 42, however, and this plane is expected to end its task in January.

Hustler No. 38, the second B-58 used in TCP drops, is now being modified to carry additional bombs. The ship will be used in another drop upon completion of modification and a shakedown flight.

One of No. 4's remaining drops will be over the Salina, Kan., range, where the tank can be recovered.



ATOMS AT WORK—Health Physicist Joe Hall uses Geiger counter to follow path of radioactive isotope moving through underground pipe line. Dept. 25 General Foreman G. S. Dean traces path with chalk.

'Lost' GD/Fort Worth Sewer Line Traced With Ease, Using Isotope, Geiger Counter

They've found another "peaceful use for atomic energy" at GD/Fort Worth.

After installing a new sink in a test lab facility, workmen sought to link the sink to an existing sewer line. Working with a 21-year-old blueprint, workmen dug four feet underground. But the sewer line wasn't there. The blueprint was off.

G. S. Dean, general foreman construction, called Joe Hall of

health physics, for a Geiger counter and radioactive isotope.

The isotope, attached to a long wire, was pushed down the sewer line. As it moved along Hall traced its route with his Geiger counter.

Health Physics Administrator F. L. Paschal Jr. admits the application was novel at GD/Fort Worth, though Hall had predicted the possibility two years ago in an Employee Suggestion.



HELLO THERE!—Mike Keller of flight department checks out tape-recorded "caution" message which is part of voice warning system, slated for installation soon on B-58 Hustlers. Light-warning system is on pilot's panel to his right.